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THE DISEASES OF CHILDREN, AND THEIR REMEDIES.

BY THE LATE

NICHOLAS ROSEN VON ROSENSTEIN,

FIRST PHYSICIAN to his SWEDISH MAJESTY, and KNIGHT of the POLAR STAR.

Tanſlated into ENGLISH

By ANDREW SPARRMAN, M. D.

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THE

AUTHOR's PREFACE.

THE Royal Academy of Sciences having been pleaſed to order my writings on the Diſeaſes of Children, to be printed gradually in their Almanacks, are now deſirous of ſeeing them together in one Work, thinking by this means to render the public ſome ſervice, eſpecially as the firſt year's Almanacks are not now to be had. Had it not been the deſire of the Royal Academy of Sciences, I ſhould not have preſumed the undertaking of ſo nice a taſk, as the compoſition of this little work. But the reſpect I owe that learned body, together with the benevolence with which the public have received my Eſſays in the Almanacks, encouraged me to continue in the ſame manner with every other diſeaſe incident to Children, ſincerely wiſhing by this means, to be of ſervice to my country, and alſo to anſwer the intentions of the Royal Academy of Sciences.

THE

THE

TRANSLATOR's PREFACE.

THIS work on the Diſeaſes of Children is tranſlated from the neweſt *Swediſh* edition of the year 1771, that being the language in which it was originally written.

The Author, lately deceaſed, Archiater *N. Roſén von Roſenſtein*, ennobled and knighted, and, what is ſtill more, univerſally admired and beloved for his merit in the phyſical ſcience, was the oldeſt and moſt experienced practitioner of phyſic in *Sweden*, and favoured the public with the preſent performance at the deſire of the Royal Academy of Sciences; he being eſpecially famous for his great knowledge of, and ſucceſs in curing, the diſeaſes of children.

The cures here laid down are founded not only on the Author's own extenſive practice and reading, but alſo on a number of practical obſervations communicated to him by other eminent phyſicians of the metropolis and the provinces of *Sweden*; many of theſe gentlemen having been the Author's pupils when he was formerly profeſſor at *Upſal*, and having had the opportunity of conſulting him ever after his being called from the univerſity to court, which happened many years ago.

The

The judicious Reader himſelf will eaſily perceive the treatiſe very well deſerving the high encomium it is diſtinguiſhed with by the famous Dr. *Tiſſot*, profeſſor *Baldinger*, and ſeveral others.

The worthy Author has made the *Swediſh* original of more univerſal uſe to his country by rendering his work intelligible even to people of an ordinary capacity; the Tranſlator has likewiſe endeavoured to make its utility equally extenſive among the *Engliſh* public. May it therefore prove beneficial to *Britiſh* children, a comfort to their parents, and conducive to the happineſs of mankind in general!

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THE

CONTENTS

THE DISEASES OF CHILDREN, AND THEIR REMEDIES.

CHAPTER I.

ON NURSES.

A CHILD ought to get a ſufficient quantity of good nouriſhment, if it is to thrive well. The beſt food for it is, no doubt, the mother's milk. We therefore find, that children thrive well, ſuckled by their mothers milk, tho' that ſhould not ſtand all the proofs which are required towards approving that of a nurſe. Thus, if another child ſhould ſuck the ſame milk, it would immediataly grow ſick. For this reaſon then, mothers ought to ſuckle their own children; by this they gain a great deal: they will at leaſt have eaſier deliveries, avoid ſeveral diſeaſes, as the milk-fever, *purpura puerperarum*, and inflammation of the womb, by a tranſlation of the milky matter; alſo *bubones lacteæ* in the groins, which often makes them lame. They avoid likewiſe the *fluor albus* or whites, which often ariſe from ſuch cauſes. *Vide Mr. Faber*, lib. cit. p. 65. Theſe motives ought to induce the mother to ſuckle the child herſelf, at leaſt during thoſe weeks ſhe is obliged to ſtay within doors, eſpecially as the mother's milk carries

off the *meconium* better than any thing, frees the child from many diſorders, and makes it acquire her own temper and diſpoſition. Therefore we ſee, that young lions who have ſucked a cow or a goat, have by this means been as it were tamed: and dogs on the contrary, who have ſucked a ſhe-wolf, have become beaſts of prey.

But ſhould it happen, that the mother has no milk, her nipples either being too ſmall, or too large, too ſhort, too hard, or too ſharp pointed, that the child cannot hold them faſt in its mouth to ſuck them: or if ſhe ſhould have ſore ones, or herſelf be too ſickly or weak, having the conſumption, gravel, or any other diſorder, by which the milk thus affected might be propagated to the child: or if ſhe is of a temper too eaſily moved by joy or ſorrow, or in a ſituation where ſhe cannot avoid being often exaſperated: then ſhe ought not to ſuckle her child, but procure a good nurſe for it. Such a one ought to be naturally of a ſerene, chearful, ſweet, and virtuous diſpoſition. She ought to be between 20 and 30 years of age, to have lain-in a little before the child's mother, and alſo to be uſed to the nurſing of children; ſhe ought to be of a ſtrong conſtitution, and not afflicted with any hereditary diſeaſe, that might be transferred to the child: free alſo from the ſcurvy: therefore her gums ought to be well examined, whether they are hard and firm. But above all other things, care ſhould be taken, that ſhe has not any venereal diſorder, ſcabs, *herpes*, hard glands, &c. as theſe are indications that her humours are corrupted.

A fat nurſe is preferable to a lean one; but if one can be found, that nearly correſponds with the conſtitution of the child's mother, ſhe will anſwer ſtill better; ſhe ought to be able to ſuckle the child at each breaſt, the nipples of which ſhould be of a middling ſize. Theſe ought alſo to be irritable, ſo that they grow erect by being gently ſtroked with your finger, which is a neceſſary quality to their giving milk. She ought to have good milk, and a ſufficient quantity of it.

Its goodneſs may be tried,

1. By its colour, which ought to be white or rather bluiſh.

2. By

2. By the ſmell, as it ſhould be void of any.

3. By the taſte, which ought to be quite ſweet, and not by any means ſalt or bitter, or in the leaſt ſimilar to that of a cow that has juſt calved, changing to what is commonly uſed. Its moſt healthy taſte is like cows milk diluted with a little water, and ſweetened with a little ſugar.

4. By its conſiſtence, becauſe when thin it is always better than when thick: therefore a drop of it on your nail, ought eaſily to run off on inclining it: even on ſhaking the finger haſtily, there ought not to remain the leaſt white ſtreak on your nail.

5. By the touch, becauſe not any pain ought to be felt, on letting a drop of it fall into the eye.

6. With rennet, for if the milk gives much cheeſe on coagulating it, you may judge it to be good for nothing.

7. By keeping it for ſeveral hours in a glaſs, becauſe if it then gives much cream it will alſo prove bad. The ſame is to be obſerved upon weighing the milk, for the more cream it gives the lighter it will be found.

8. By the age, becauſe the older the milk is, the thicker and more unhealthy it will be; therefore, when the choice of two nurſes can be made, the one of 30 years of age, and her milk one month older than that of the mother, and the other at the age of 20 years only, and her milk 6 or ſeven months old, we then ought to give the preference to the firſt, provided they both agree in other circumſtances. If we cannot procure any nurſe, and the mother cannot ſuckle her child, then we muſt accuſtom the child to ſuck by means of a little inſtrument, or ſucking bottle (called *Biberon*), which is univerſally uſed in Eaſter-Bothnia with great advantage; but this machine ought always to be kept clean: it is to be made of horn, the ſmaller end of which may be faſtened to a tanned ſkin of a cow's teat, or if that is not to be procured, we may uſe any other thin ſkin, pierced with many ſmall holes. Pour in this as much cows and goats cream (unboiled) as you think the child will uſe at once, dilute it with water, and ſweeten it with a little

ſugar. As the child grows older, we may give it more food, as ſhall hereafter be mentioned.

It is not only neceſſary to procure a nurſe with the above-mentioned qualities, but ſhe ought alſo to obſerve a healthy and regular diet, in order to make the child thrive better; therefore it is neceſſary that ſhe ſhould have a large and airy chamber, free from any draught of air; it ought to be equally and tolerably kept warm, often ſwept clean and neat, in order to avoid any bad ſmell, as alſo to prevent the nurſe and the child from getting the itch; ſhe ought not imprudently to expoſe herſelf to the cold; and except when it cannot be avoided, ſhe ought always to cover her breaſts very well, and if they ſhould at any time grow cold, then ſhe ought to omit ſuckling the child until they are grown warm again, otherwiſe the child will get the catarrh at the noſe, and cough: however in my opinion, ſhe ought not by any means to keep continually in the chamber with the children; on the contrary, ſhe ought to have free acceſs to the other rooms whenever ſhe pleaſes, and there perform any kind of gentle exerciſe. I have myſelf known the milk of a good nurſe ſpoiled by ſuch a confinement, which by moderate exerciſe in the houſe, from one room to another, was reſtored again in a fortnight's time. She ought to have a ſufficiency to eat, and that at certain hours: ſmall beer may be drank at pleaſure, but this ſhould be neither ſour, new, or ſtale, and not to be drank, by any means, when drawn over night. Wine, brandy *, ale or coffee, ought by no

* A child perfectly freſh and healthy, and having alſo a healthy and chearful nurſe, thrived always very well in town, but when it was ſent to paſs the ſummer in the country, it grew weak and ſick every Sunday: I could not conceive the reaſon of it, thinking the nurſe lived on thoſe days, the ſame as on other days: ſhe never got brandy to my knowledge, as is cuſtomarily given in Sweden to other ſervant-women; at laſt I found out, that ſome of her fellow-ſervants gave her part of theirs, which being prevented, the child was as well on Sundays as on the other days.

means

means to be given her; tea ſhe may drink with milk, but ſeldom; the veſſel out of which ſhe drinks, ought every day to be cleaned, and to be made of ſtone, rather than any thing elſe. Some are uſed to put melaſſes in the nurſe's drink, but I have known it occaſion a great flux to the children. With reſpect to food, there is no occaſion for ſo great a nicety; the food which the nurſe is moſt accuſtomed to, and likes the beſt, is generally the moſt ſuitable; ſhe ought not to eat any thing ſour, or ſeaſoned with onions or garlic; but if ſhe eats any peaſe, turneps, or cabbage, the child will generally be troubled with wind.

The nurſe ought every day to have a ſtool, and immediately to let you know if ſhe is coſtive, which ought to be remedied as ſoon as poſſible, by a ſuppoſitory prepared of two drams of honey and half a dram of ſalt; this is to be dipped in oil of olives. We never dare give purges to a nurſe, becauſe if her breaſts are full at the time ſhe takes the purge, and ſhe a little time after is obliged to ſuckle the child, the medicine will have no effect upon her, but purge the child, which generally by this means loſes its life. If the nurſe gets a flux, you give half a dram of rhubarb, and eight hours after if neceſſary, a ſmall teaſpoonful of *Elect. e ſcordio*; but in the interim we muſt prepare ſome other food for the child.

A nurſe who ſuckles, hardly ever has her menſes at that time; but if they ſhould appear, they will generally be accompanied with gripes: I have evidently found that children ſucking on thoſe days have been indiſpoſed; therefore it would be much ſafer, if ſome other perſon ſhould ſuck the nurſe's milk on thoſe days, and the child in the mean time, to be fed with clear whey, which is to be prepared of coagulated milk and eggs: ſuch whey I mean, as we get in preparing egg cheeſe; this as well as all other food for children ought to be well covered over, that no inſects or any ſuch thing can get at it; therefore it would always be of ſervice, to accuſtom a child early to other food. It may feed on what is already mentioned, while in its infant ſtate, and that principally by way of the above-mentioned ſucking-horn; afterwards we may give it milk (unboiled), which

ſhould be diluted with barley-water, provided the child has any ſlight fever. If the child is diſpoſed to obſtipations, mix the milk with a little thin oatmeal-gruel filtrated, in which diſſolve a little clarified honey; meal pap is never to be given to any child, it is too gluey, tenacious, and ſlimy a food, and cauſes obſtructions in the meſentery, hardneſs of the ſtomach, acidities, wind, and many other indiſpoſitions, by which means we loſe at leaſt the one half of our children. Mr. Mauriceau's 263d obſervation, and that of Dr. Zimmerman at Zurich, proves this ſufficiently *. When the children are half a year old, we may begin to give them unboiled milk, in which we have mixed a little rye-biſcuit, which is tender and well fermented, being previouſly ſoaked in warm water. The nurſe ought to avoid all commerce of love, becauſe the child will ſuffer by that: the milk by this means, will be ſpoiled and grow ſalt; therefore a married nurſe ought at that time to have no connections with her huſband. If we diſcover in her ſuch an inclination, ſhe is then no longer fit to be a nurſe: and the ſame is to be obſerved, if ſhe is big with child.

Exerciſe is indiſpenſably neceſſary to a nurſe, if we wiſh her to thrive well, and that in her body ſhall be prepared a milk which is not too thick, or which too eaſily grows acid: for that purpoſe, it is neceſſary to order the nurſe to take ſome exerciſe, or to put her to ſome work; for inſtance, to let her grind wheat in a ſteel mill, or ſome ſuch other thing, which will bring on a gentle ſweat. The time for exerciſe ought not to be immediately after taking the food, but ſome time before ſhe is going to eat.

If the child is very uneaſy, ſo that the nurſe is prevented from her ſufficient and neceſſary ſleep, ſhe will then grow feveriſh, her breaſts dry up, the milk will turn yellow and bad; therefore a dry nurſe muſt be called to her aſſiſtance, in order that ſhe may ſleep 8 hours out of four-and-twenty. She ought to know

* See alſo his fine treatiſe *Von der Erfarung*, LI. p. 264, where this neceſſary obſervation is treated more at large, 1, 2, 3, 4.

how

how to govern her paſſions; if ſhe ſuffers herſelf to be exaſperated, ſhe ſhould not ſuckle the child immediately, as it will grow indiſpoſed, get convulſions, or ſome other dangerous diſeaſe, and often loſe its life. Dr. Albinus ſpeaks of a child, a year old, ſucking its mother, when ſhe was exaſperated, the conſequence of which was, that the child immediately got an hæmorrhage through the eyes, ears, noſe, mouth, *inteſtinum rectum*, &c. and died; another is to be ſeen in the number 3 of Convulſions. It is therefore of great conſequence, that every one in the houſe, but eſpecially the dry nurſe, does not give any occaſion for the nurſe to be exaſperated, and that we do not ſuffer her to ſuckle the child before her anger is ſubſided, and that ſome woman or other has ſucked out her breaſts, and that the nurſe herſelf has taken in a cup of water the following powder: eight or ten grains of purified nitre, and thirty grains of *morſulæ citri:* I obſerved that ſhe ought to let her breaſts be ſucked by ſome other perſon, and not to empty them, according to the general method, as that is not only inſufficient, but it alſo injures her breaſts.

If the nurſe happens to be frighted, and the child ſucks her, it will then ſuffer; in this caſe her breaſts muſt alſo be drawn off by ſome other perſon, after which ſhe ſhould take 30 drops of *ſpiritus cornu cervi ſuccinatus*, i. e. ſpirit of hartſhorn with amber, before ſhe ſuckles the child again, as alſo every kind of fear ought to be baniſhed before that time.

In caſe the nurſe ſhould be uneaſy and hipt, the child will then begin to pine away: we ſhould endeavour to find out the cauſe of her uneaſineſs, and if it cannot be removed, we muſt then procure another nurſe. If the nurſe falls ſick, the child ought not to be ſuckled, until ſhe is recovered again. In the interim, it may be ſuckled by ſome other perſon, or fed as before-mentioned. If we are obliged, from one of theſe circumſtances, to change a nurſe, we find it is of no dangerous conſequence, provided the one that is made choice of, has the above-mentioned qualifications, though her milk ſhould be ſomething younger than the former; but yet that difference ought not to be of more than 6 weeks, otherwiſe the

child would eaſily get a dangerous flux. The buſineſs of a nurſe is to ſuckle the child whenever it is hungry or dry, but not by any means ſo often as it ſhrieks and cries, becauſe by this its little ſtomach becomes overloaded, its food cannot be digeſted, and by changing in the ſtomach, grows acid and acrid, then cauſing vomitings, attended with gripes in the bowels. Nurſes and mothers imagine this vomiting a ſign of childrens thriving well, but we may compare it to that of a full grown perſon, who eats and drinks ſo often and in ſuch quantities, that he is obliged to vomit ſeveral times in the day. A nurſe would therefore do well, to uſe the child to ſuck at certain hours in the day, and even then no more than what is neceſſary: ſhe may eaſily perceive when it wants to be ſuckled,

1. From the time it has gone without ſuck.

2. If it fixes its eyes on the nurſe, and they ſeem as it were to follow her wherever ſhe goes.

3. If joy ſparkles from the child's eyes, when ſhe opens her breaſts.

4. By the child ſucking her finger on its being put into its mouth.

The nurſe ought not to ſuckle the child immediately after eating, as the milk would then ſoon grow acid in the child's ſtomach and occaſion gripes; neither ought ſhe to ſuckle the child before ſhe has breakfaſted, as the milk would then be a little acrid. Should her milk decreaſe, ſhe may drink cows milk diluted with water, in which a few fennel ſeeds have been boiled; but this will be of no efficacy in caſe ſhe is big with child. She ought alſo to ſuckle the child as often at one breaſt as the other, if ſhe does not, the child will grow crooked; and for this reaſon alſo, ſhe ought not to carry the child always on the ſame arm. It is likewiſe neceſſary, that ſhe learns to ſwaddle right, and alſo taking care not to ſwaddle it too hard, eſpecially acroſs its breaſt and ſtomach; nor ſhould ſhe by any means forget, that when the child is ſwaddled to the right ſide, it ought next time to be ſwaddled to the left, to prevent its growing crooked. If the child ſhould cry or ſhriek whenever it is ſwaddled, ſhe ought immediately to take it off again,

again, as it may ſo happen, that it is preſſed by a fold, or pricked by a pin, or on ſwaddling it may have moved its arm out of order *. The bandage is alſo to be taken off, as often as the child is wet by piſſing, &c. otherwiſe it will be excoriated; and whenever it is ſwaddled, the door muſt be ſhut, that the cold air may not affect it. The moſt approved practice therefore, would be never to ſwaddle children, which phyſicians have demonſtrated by very convincing arguments, as has alſo Profeſſor Von Schulzenheim, and ſome others by laudable examples on their children. Was a full grown perſon obliged to be thus ſwaddled, would he not think it a great hardſhip? But we ſeem to have no compaſſion on our innocent children.

The nurſe ought often to change the child's cap, and never put it on a narrow one, by which its head would be preſſed and its growth prevented. The nurſe ſhould put a piece of cloth under the cap over its fontanell, in order to keep it warm, or rather the cloth ought to be ſtitched to it: the ſame is alſo to be obſerved in reſpect to that fontanell behind the former one, becauſe that alſo may happen to remain open for ſome time.

Dirt on the head of a child, with which it is born, ought as often as poſſible to be waſhed off with ſoap, but this muſt be done gently; becauſe if it was to lay there, it would at laſt lay the foundation for naſty ſcabs. That glutinous ſubſtance, which is on its ſkin, ought to be waſhed off with warm water; otherwiſe it dries up, and forms ſcales.

A ſleepy nurſe ſhould never be ſuffered to ſit with the child by the fire-ſide: many unhappy circum-

* A child three months of age, on being ſwaddled began to ſhriek amazingly; an old experienced gentleman being preſent, gave the child ſeveral red powders of Dr. Michaelis's *ſpecificum anticephalicum* one after another; notwithſtanding this its ſhrieking continued: a young lady of high family being preſent, obſerved that the child ought to be unſwaddled; which being done, the child was ſilent immediately: its right arm was already blue by its being carried on its back, between the folds of the ſwaddles.

ſtances

ſtances prove to us the danger with which it is attended. Care ſhould likewiſe be taken, not to cauſe any ſmell by the coals, by which means children have frequently loſt their lives; at leaſt they will have head-achs attended with reachings and vomitings: this is to be cured by applying to the forehead linnen rags dipped in warm vinegar of roſes. Thoſe complaints the nurſe may get by heats, may ſoon be remedied by going into a little colder room, and applying a ſod of graſs to her forehead.

When we are obliged to ſwaddle a child by candle-light, we ſhould place a candle oppoſite its feet, becauſe the child always looks towards that place where the candle ſtands, and conſequently without this precaution, would ſquint, was the candle to be placed on either ſide of it: if the child while in its tender years, has acquired this bad habit of ſquinting with one eye, then we may hope for a cure, by covering its other eye for ſome months, as that obliges the child to look ſtrait forward with that eye it has accuſtomed to ſquint with. When children do not ſuck well, our old women ſay, that they are tongue-tied, and pretend that the bridle ought to be ſnipped with a pair of ſciſſars. I have never as yet ſeen any child's tongue tied. The reaſon of their not ſucking well, is generally that the child has gripes, or that the milk has acquired ſome bad taſte: but oftener it ariſes from ſome defects in the nurſe or mother's nipples, as before-mentioned, ſo that the child cannot keep them faſt in its mouth, or ſuck the milk out. The child then generally ſmacks in ſucking them; this defect in the nipples cannot be remedied, therefore another nurſe muſt be procured. If the child, when it ſhrieks, does not carry its tongue up to the palate, or to the outſide of the lips, and the point of the tongue is not round but cloven as it were, we then know that its tongue is tied, but in other caſes we may conclude it is not; ſhould an operation be judged neceſſary for it, it ought never to be done with the nails, but performed by ſome experienced man; otherwiſe one of the blood-veſſels near the tongue might eaſily be opened, and the blood flow from it, which is not always to be perceived, becauſe

cauſe the child ſwallows it. Such unhappy accidents may be ſeen in Mr. Mauriceau's 301 Obſervation, and in Mr. Dionis's Treatiſe of Operations, p. 626. When the tongue's bridle has been improperly ſnipped, it has happened, that children have been ſuffocated by turning the tongue round, and carrying it down into the throat. Such accidents are mentioned by Mr. Petit, in the Tranſactions of the Academy of Sciences in France, for the Year 1742.

A child in its infant ſtate, hears but little, therefore we ought not to ſpeak ſlow in its room, but rather uſe it by degrees to noiſe. A nurſe ought alſo with her finger to ſtrike backwards and forwards in the child's mouth, principally over the gums; this will afterwards be of great ſervice to the teething.

She never ought to keep a young child upright, unleſs its head is ſupported by ſomething elſe; it ought alſo to lay with its head a little higher than the other part of the body, otherwiſe it will be ſubject to apoplexies: neither ought it to lay a long time on the ſame ſide, but be turned as ſoon as it appears uneaſy in its ſleep or awake. It would likewiſe be of great ſervice to omit that bad cuſtom of rocking children, as by that means they grow vertiginous and drunk as it were; the milk likewiſe coagulates thereby in the child's ſtomach; conſequently the ſleep brought on by rocking will do no good. Take away the cauſe of this uneaſineſs, and it will ſleep ſoundly. Our peaſants uſe hanging cradles, whoſe motion is leſs violent. Mr. Van Swieten (Comment. p. 681), gives an inſtance of a boy 8 years of age, being put into a cradle by his play-fellows, kept there and rocked violently till he got a violent vertigo, and vomited gall in colour reſembling verdigreaſe. The cradle or the bed of the children ought not to ſtand near any ſtove, fire-place, or near a wall, where a chimney paſſes by from any room below, in which a fire is kept: for thereby it would be uſed to ſuch a warmth, that it would get catarrhs at the noſe, on being afterwards carried to the window, or ſome other part of the room; the cradle ought alſo to be put in ſuch a direction, that a ſtrong light may not fall upon the child's eyes. A

full

full grown perſon will find it offenſive to his eyes by working on a table oppoſite to the window. It is not only neceſſary for the room to be kept clean, in order to prevent the child's getting the ſcab, but the nurſe ought alſo to keep herſelf neat and clean: likewiſe the child's linnen, rags, flannels, &c. ſhould frequently be ſhifted.

In general we indulge a child by ſucking till it has gotten all its 16 milk teeth: in this however, we cannot fix any certain time, as a weak child ſhould ſuck longer than a robuſt one. Nevertheleſs it ought to leave off by degrees, and as a beginning towards that, ſhould only be ſuckled in the night time. At laſt when the nurſe will wean it entirely, ſhe may ſmear ſome eſſence of worm-wood on her nipples, which will ſoon give the child a diſguſt for ſucking.

When the child has left off ſucking, it will grow coſtive in the beginning, nevertheleſs it will eat much, get indigeſtions and gripes; therefore we ought to give it ſometimes a little manna to ſuck, and ſometimes alſo of what is commonly called *anima rhei*, which beſides the advantage of removing coſtiveneſs, alſo corrects acidity, and ſtrengthens the ſtomach and bowels.

Tender children are generally wet behind their ears, though they thrive well in every other reſpect. It is dangerous to uſe any repellent phyſic againſt this diſcharge of humours, for fear it ſhould then attack the eyes. Such a diſcharge behind the ears of a nobleman's ſon, being dried up with an ointment of ceruſſe or white lead, occaſioned its eye-lids to grow ſore, and its eyes to redden in ſuch a manner, that I feared the child's loſing its ſight: but it was cured by a ſmall veſicatory applied behind its ears, and by the red ointment of St. Ives, ſmeared with a pencil on the margin of the eye-brows.

If we could prevent the ſhrieking of children, it would be of great advantage, becauſe much ſhrieking may have many dangerous conſequences: for example, the blood is retained in the brain, for it can eaſily enter the *arteria pulmonalis*, but cannot well get out again; beſides the child grows dry in the throat, feveriſh, and gets eaſily a rupture. The whole art of

ſilencing

ſilencing a child conſiſts, 1. In removing the cauſe of its ſhrieking; or 2. In amuſing it with ſomething which ſtrikes its fancy, and wholly engages its attention, and makes it forget what it cried for.

Shrieking we may judge to be cauſed by a diſeaſe, if the child's ſcrotum is relaxed, or its excrements green, or the linnen coloured by the urine after being dried, or if it is externally affected with excoriations, boils, or ſuch other things, of which the nurſe ought immediately to give the parents notice, in order that they may procure it ſome relief.

If the child is hungry or dry, it ought to be ſuckled.

Should it have ſucked too much, it will not be relieved unleſs by vomiting. If it has lain too long on one ſide, and is affected by that, it ſhould be turned on the other. Care ſhould likewiſe be taken, that it be not too warm in the cradle.

If the child is ſwaddled too cloſe, or in ſleeping has carried ſome member into diſorder, or has fouled itſelf, it will be quieted by being unſwaddled, ſhifted, and dried before the fire, and its feet likewiſe warmed. Hard ſwaddling preſſes the blood up towards the head, therefore a child which is pretty fat, always looks the handſomeſt when it is unſwaddled.

It alſo ſhrieks, on hearing any perſon cloſe to the cradle, whoſe voice it is not accuſtomed to hear; this is ſoon remedied by the perſons being ſilent. If the cuſtomary time of its dreſſing or ſleeping is omitted, that omiſſion ought the next time to be corrected, as only the ſimple neglect of what it has been accuſtomed to, then makes it ſhriek.

We enquire if the nurſe has her menſes, as we know if the child ſucks on thoſe days, it will of courſe be uneaſy. The true reaſon of this is, that the woman is then more eaſily moved, or ſooner liable to be affected by ſomething, than at another time.

If we can neither find out, or eaſily remove the true cauſe, then we muſt make uſe of the ſecond method, that has already been ſpoke of; and which is, to ſhew the child any thing that it is unacquainted with, and either by means of its colour, or glitter-

ing brightneſs, pleaſes it; or we may carry it to the window, or to a looking glaſs, ſhake a rattle, tinkle a ſmall bell, bite on ſome ſonorous thing, or ſing to it. We may huſh it, but never immediately after its having been ſuckled. We may alſo carry it to another room, or give it to any one it is very fond of. If it is a girl for inſtance, we ſhew it puppets; and if a boy, horſes, &c. carefully remembering againſt the next time, what had the greateſt effect towards pleaſing and making it quiet: but above all, care muſt be taken, that the nurſe in ſecret does not give it *philonium theriaca*, or ſuch ſoporifics; becauſe children which often get theſe things grow ſtupid, crazy, convulſive, and die. From all this, it plainly appears how much the child may ſuffer by its nurſe. How nice we ought to be in the choice of her, and likewiſe how neceſſary it is for parents to keep a watchful eye on the nurſe's conduct. On her conſtitution depends the child's health, or diſeaſes, or whether it ſhall be lame or not. Now in matters of ſuch great importance, unleſs we will merely depend on chance, we ſhould uſe the means which the Almighty has given us to provide for our children's welfare. For a more circumſtantial account of this, ſee Profeſſor Schulzenheim's Oration on the Nurſing of Children, ſpoken before the Royal Academy of Sciences, in the year 1760.

CHAP. II.

COSTIVENESS.

DURING the firſt 24 hours after the child is born, we ought not to allow it to ſuck, unleſs from a piece of muſlin, in which is contained a little manna, ſugar, or an electuary prepared of the ſame. By this means, it will have three or four ſtools a day, for the firſt three days, which will be very conducive towards entirely diſcharging the *meconium*. Afterwards a couple of ſtools a day will ſuffice: when the child ſucks, theſe ſtools ought to be larger in proportion.

When

When a child remains 24 hours without a ſtool, we then judge it to be coſtive, and ought immediately to relieve it: the ſafeſt method of doing this, is with the above-mentioned electuary, which ſhould be prepared according the *Pharmacopœia Wirtenbergica*: we may ſend for an ounce of it at a time, and give a tea-ſpoonful of it to the child every three hours, leaving it off, as we judge it will operate, which may be known by hearing any noiſe it will occaſion in its body. To a child at the age of 6 months, we may give two tea-ſpoonfuls at a time, and ſhould it after this continue coſtive, we muſt then aſſiſt nature by a ſuppoſitory, which may be made either of tallow dipped in oil, or a raiſin freed from its ſtones, and afterwards dipped in oil. Children that are hard ſwaddled acroſs their bodies, will not have a ſtool until they are unſwaddled.

Thin fleſh broth goes almoſt wholly into the blood, but as this is not the caſe with the milk, it will therefore give more excrements; beſides children are weak, and their digeſtive organs leſs ſtrong. The guts are alſo proportionably longer than thoſe in a full grown perſon: for this reaſon then, more will remain in the bowels of what children eat, and conſequently make their evacuations larger in proportion than in full grown people.

If the nurſe's milk is old, the child will be troubled with gripes, and be coſtive. We may ſometimes remedy this, by the nurſe eating a pickled ſprat in the morning, ſo that ſhe may drink the more, and conſequently her milk will be diluted. If this does not ſucceed, we are obliged then to change the nurſe for another, that has younger milk, but not under ſix weeks.

If the child has left off ſucking, and its diſpoſition to be coſtive ſtill remain, we ought to rub daily with a warm hand upon its ſtomach and lower part of the belly, give it a little milk, in which we may mix a little oatmeal-gruel and honey, and let it uſe a little exerciſe immediately after it, to aſſiſt nature towards procuring a ſtool. This being done for ſeveral days together in the morning, and always at the ſame hour, nature will at laſt become habituated

to this neceſſary evacuation. We only make the caſe worſe, by having conſtant recourſe to phyſic, as by that the bowels become inſenſible.

Oil, butter, and every thing fat, injures the ſtomach, diminiſhes the periſtaltic motions of the bowels, and conſequently prevents them from making the neceſſary evacuations. The ſame is to be underſtood of the yolks of eggs, as they contain much oil; we may expect the ſame from a nurſe's milk, if ſhe is fat. *Haller's Element. Phyſiol.* vi. p. 200. vii. p. 90. & 103. and Dr. Tiſſot in his *Avis au Peuple*. Perhaps this is the reaſon of their requiring ſuch ſtrong doſes of purging medicines in Switzerland, as they are much uſed to fat milk there? See Dr. *Tiſſot*, l. 6. p. 573.

CHAP. III.

Procidentia, vel *Prolapſus Ani.*

WHEN children get a diarrhœa, or looſeneſs, it frequently happens, that the *inteſtinum rectum* falls out, which if not immediately cured, will become habitual. I never found any better remedy for this, than fomenting the part fallen down with a fine ſpunge, dipped in warm wine. *Fuligo*, or ſoot from wood, powdered ſmall and ſifted, will alſo cure it by ſtrewing it on the *rectum*, and by carefully introducing it into the body again. It will alſo be of ſervice to fumigate the protruded part with maſtix.

Should this diſeaſe prove obſtinate, the beſt expedient would be always to accuſtom the child to a high eaſy chair, whenever it goes to ſtool, ſo as to prevent its foot reaching the floor, as the *rectum* will not fall out then. The child's parents need be under no apprehenſion about this, becauſe, in proportion as the child's years and ſtrength increaſe, this weakneſs generally diſappears of itſelf.

CHAP.

CHAP. IV.

EXCORIATION.

EXCORIATIONS may ſoon be relieved by applying to the excoriated parts the powder of *Farina Lycopodii*.

Should it ſpread far, we may anoint the excoriated parts with the following unguent.

℞. *Unguent. Pomad. Cerati.* ℥iij.
Flores Zinci.
Farina Lycopodii, ana ℥j. *M. optime. Dr.*

CHAP. V.

PNEUMATOCELE.

THIS, which in children is called a windy rupture, is very eaſily remedied by applying to it a piece of flannel or cotton fumigated with maſtich, or fomenting the part with cloths dipped in warm white claret and lime water; or by applying to it *emplaſtrum diaſulphuris Rulandi*. The generality of people neglect procuring any remedy for this diſorder, under this pretext, that if they are affected by it in their youth, they will be unfit for ſtrong labour all their lives after. From this I ſuppoſe ariſes the old ſaying, that every eighth man has a rupture. Children ſhrieking much, will have ruptures, as their *omentum* is in a relaxed ſtate. Dr. Haller in his *Elementa Phyſiol.* vi. p. 378, and alſo Mr. Arnold in his *Memoires de Chirurgie*, enumerates thoſe places where a rupture may happen. The ſureſt relief is to be had from bandages well made, and with ſteel ſprings.

CHAP. VI.

CATARRH OF THE NOSE.

A Catarrh of the noſe prevents children from ſleeping, and makes ſucking very difficult to them: thoſe that are expoſed moſt to any draught of air, or too much heated, by their bed places ſtanding too near the fire, will be moſt liable to this diſorder; they will find ſome relief by anointing their noſes with an ointment of marjoram, &c. or by blowing ſome fine powdered ſugar up the noſtrils. I never found any thing of ſuch efficacy as the oil of eggs, frequently ſmeared on the noſe *.

CHAP. VII.

GRIPES.

WE imagine children to be griped, when they are uneaſy, often ſhriek all on a ſudden, and violently contract themſelves, kick much, ſleep little, and then ſmile; the excrements are green, or ſoon will be ſo, and its cloths appear greeniſh when they are dried. The excrements have a ſour ſtench, and wind coming from the child, ſmells likewiſe ſour; if they ſhould remain long, the excrements will have a pale yellow colour, and appear very thin, with little

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* If the ſtoppage of the noſe is increaſed to ſuch a degree, as to prevent the child from ſucking, we muſt apply to its noſtrils, a piece of warm linen dipped in a mixture made of

Aquæ Marjoram ℥ ſs.
Vitrioli Alb.
Elaterii Alb. ana gr. ij. *M. Dr.*

lumps.

lumps. If the child makes more water than uſual, or as the ſaying is, if it bepiſſes itſelf up to its elbows, it will ſoon be affected with gripes, as probably this is a ſign of being coſtive.

We ought to cure gripes as ſoon as poſſible, otherwiſe they will occaſion convulſions. It is very remarkable that a child affected with the gripes, refuſing to ſuck, will by being held upright before the nurſe, ſuck without the leaſt difficulty until it is ſatisfied *. A child that has the gripes, either is or not coſtive; in the firſt of theſe caſes we may relieve it by ſome of the abovementioned electuary of manna, and ſhould that be too ſlow in its operation, we may give a clyſter, prepared with ſix ſpoonfuls of milk, four of oil, and a little ſugar mixed well together; in the other caſe, ſhould the child be ſufficiently looſe, we can immediately palliate its pains by applying on its ſtomach a cake moderately warm, prepared of oil of olives, yolks of eggs and flour, which may be baked in a frying-pan; or we may melt ſome of the *Balſamus Scherzer* in a ſpoon, ſpread it on a piece of leather, and apply it to the child's ſtomach; but this only gives relief for a few hours. Abſorbent powders procure ſome relief to young children, but it is very difficult to know when we have given enough of them. *Magneſia alba*, prepared according to the *Pharmocopœia Edinburgenſis*, is the beſt remedy, as it corrects the acidity and occaſions ſtools. It may be either taken in almond-milk, fennel-water, or the child's common drink. We ought to give the mother or nurſe a peculiar powder, which is to be prepared of

℞. *Magneſia Albæ* ℥j.
Cort. Aur. Hiſpal. Cond. et exſiccat.
Sem. Fœniculi dulc.
Sacch. Albi, ana ʒij. *Miſce f. Pulvis.*

* The reaſon of this perhaps is, that the acidity then runs down from the *cardia*, which has many nerves, and is conſequently the more irritable,

As this is not disagreeable nor in the least affecting, a nurse may take this during the whole time a child is affected with the gripes: I myself knew a nurse who was obliged to take this for eight months together, morning and night, and if ever she omitted it for two days only, the child fell sick of the gripes; it is now four years ago, both are still alive, and in perfect health.

To the child itself we may give frequently a little hartshorn jelly, prepared without acid; and every hour or half hour when awake a tea spoonful of the following milk for children.

℞. *Aq. Fol. Tiliæ* ʒij.
Ceraſor. Nigr.
Ol. Amygd. dulc. rec. & frig. ana ʒi.
Salis Tartari ℈j.
Ovi. rec. vitell. ziij.
Mucil. Gum. Arab. ʒj. *M. D. S. Milk for children.*

We could easily correct acidities in children, and also promote their digestion, could we by any means prevail upon them to take small pills of half a grain each, prepared of some gall, for instance, that of eels, to which should be added a little saffron; soap would likewise be of greater efficacy, but it is too apt to grow rancid. *Conf. V. Swieten's Comm.* iv. p. 684. and Dr. *Haller's Element. Physiolog.* vi. p. 608. on the virtues of gall in general.

The nurse's diet in these cases ought to be flesh, and thin flesh broths, in which we may dissolve a few yolks of eggs, well beaten. All acid food must be avoided. We should also procure a dry nurse to assist her, so as to relieve her from too much exercise, as by this her milk will be spoiled. Exercise is notwithstanding at all times necessary, so as to occasion a gentle perspiration, and more particularly at this time. I have already observed in the chapter on nurses, an instance of a nurses milk being spoiled in a fortnight's time, meerly for want of exercise, and restored in as short a time by using it moderately. Should this precaution prove insufficient, we then must procure ano-

ther nurſe, whoſe milk is younger than the former, and perfectly void of acrimony.

Gripes are a very common diſorder among children of the poorer people, eſpecially in the ſummer ſeaſon, as their mothers then live chiefly on ſour milk, which occaſions gripes in the children, followed by convulſions and apoplexy, by which numbers of them loſe their lives. Happily their mothers are at that time, for the moſt part, employed in either corn fields, meadows, &c. which labour corrects in a great meaſure the acidity; was not this the caſe, few of their children would eſcape death: their mothers to remedy this ſhould give them as much oyſter-ſhell powdered as will lay on the point of a knife, two or three times a day, in a little water, and repeat it, till the green colour and ſour ſmell of the excrements are quite corrected: ſhe ſhould alſo have by her always at hand, a gallon bottle of ſpring water, in which ſhould be diſſolved an ounce of ſalt of tartar, in order that ſhe may take a ſpoonful of it two or three times a day, as ſoon as ſhe finds the child affected with the gripes; otherwiſe if ſhe waits, as is generally done, until convulſions come on, the event will be dangerous and uncertain.

CHAP. VIII.

DENTITION.

AS ſoon as a child arrives at the age of four months, and becomes then indiſpoſed, we generally ſuſpect its indiſpoſition is occaſioned by its teeth, though this oftentimes has quite a different appearance, which not being taken notice of, increaſes, and gets the better of the child: we ought therefore not to cure it inconſiderately, but make a diligent enquiry into the real cauſe of the diſeaſe, whether it is or is not occaſioned by dentition. We may eaſily know this by the following ſigns *.

* The firſt ſign Dr. *Van Swieten* obſerved, was the upper margin of the jaw increaſing in breadth; by the two

1. By the child's frequently putting its finger, or any thing it lays hold of, into the mouth, or by biting hard upon the nipples of the breaſt; the reaſon of its doing this, is, to allay the itching which the preſſure of the growing teeth occaſions in the gums.

2. If the child ſpits much, or ſwallows its ſpittle. In the latter caſe, it will for the moſt part have reachings or a diarrhœa, which is of great relief in the cutting of teeth.

3. If the gums are tender, ſwelled, or already inflamed; the firſt of theſe we may know by the nurſe's feeling in the child's mouth, and the latter may be ſeen by looking at them. The child will alſo feel ſome kind of pain or ſmart by ſucking.

4. If the tonſils, eyes, or cheeks, ſwell and become red.

Should all theſe ſigns be obſerved, the child is beyond a doubt affected by its teeth, and every thing will happen in the above-mentioned order. When the teeth are emitted one by one, the child's pain will be trifling, but if ſeveral pierce the gums at the ſame time, dentition will be accompanied with fever, anxiety, ſtartings, convulſions in the muſcles of the face and whole body, and ſometimes much worſe, ending either in a lethargy or death itſelf. Dentition is both early and eaſy, when the child is born the full time

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two *laminæ* (of which the jaw conſiſts) being diſtended a little aſunder, ſo that the tooth might find room to make its exit. See his Comment. iv. p. 745. I have ſeen children with thoſe ſigns obſerved at No. 1. and No. 2. before the teeth came out, and after having recovered from being very ſick for ſix or ſeven days before; but three weeks after that I obſerved a ſmall hole in the gums, thro' which the tooth was protruded one or two days after without any kind of pain. This ſeems to confirm what Dr. *Harris* obſerves in his *Treatiſe on the Diſeaſes of Children*, which is, that dentition has two periods; the one when the *laminæ* of the jaw begin to divide, conſequently extend more the membrane and gums covering their ſockets; the other when the tooth is piercing through this membrane and the gums.

after

after conception, and of healthy parents; and its mother during her pregnancy has not been ſubject to violent paſſions, but on the contrary been of a good and cheerful diſpoſition, has eaten good food, and given the child wholeſome milk. The more we neglect the abovementioned rules, the more difficult dentition will be, and the child conſequently ſooner loſe its life. Thoſe which we call eye-teeth *(Dentes Canini)* and thoſe oppoſite them, in the under jaw, are the moſt troubleſome of all; and more eſpecially if they, as generally happens, ſhoot out later than the foremoſt grinders; as they then muſt be ſqueezed between them and the fore-teeth, which are very often ſituated very cloſe to one another.

A tooth before it can ſhoot out muſt firſt pierce the gums; * in caſe the teeth ſhould not be hard enough, they cannot work their way through, or if the gums are too thick, more time will be required for piercing them, as a greater number of fibres are then to be torn aſunder, this occaſions irritation and pain, both of which cauſe a heat in the mouth, a greater flow of humours to the part affected, ſwellings, inflammations, and reſtleſſneſs; from this we learn that dentition becomes eaſy if we by any means make the gums thin and inſenſible, and procure hardneſs to the teeth. The laſt of theſe we gain by giving the child wholeſome mother's or nurſe's milk; and the former may be done by the nurſe's rubbing her finger gently on its gums in the manner above mentioned. By this means the gums will become ſo thin, by the time the child is at the age of three months, that the teeth will ſhoot out almoſt without occaſioning the leaſt ſenſation. I do not write this merely as a theoretical reaſoning, but from re-

* Mr. Bertin is of opinion, that the pain is cauſed by the true root of the tooth preſſing the nerve, giving ramifications to the tooth. That little bony *lamella* (*diaphragma oſſeum*) which is between the milk-tooth, and that below it, ſeems to prevent the former from preſſing the latter. See *Euſtach. de Dentib.* and *Albini Annot. Acad.* l. 2

peated experience. It will equally be of ſervice, to let the child bite upon a wolf's tooth, or any other hard thing; the only inconvenience this may be attended with, is, that the child by playing with it, may eaſily hurt itſelf in the face, and eſpecially in the eyes; if by neglecting part or the whole of theſe precautions, dentition already be very difficult, with the above-mentioned bad ſymptoms, we muſt, 1. relax the gums, and 2. prevent as much as poſſible the ſenſation of pain occaſioned by the preſſure of the tooth. As to the firſt, the gums may be ſoftened and relaxed by frequently touching the tumid and pained part with warm honey, ſyrup of violets, althæa root, or ſome good oil of olives, or of almonds cold drawn; freſh marrow or butter, freſh brains of a hare, or a calf, or any other animal; the more relaxing and aperient to the gums, the better they are.

As ſoon as the child, from frequent uſe, will ſuffer us to finger its mouth, we may apply to the inflamed part a roaſted fig, or a fine ſpunge dipped in a warm decoction of carrots, or in milk boiled with figs, althæa root, and a little ſaffron; this is exceedingly palliating, but ought to be frequently changed. Some people are uſed to boil a whole althæa root in honey, and give it to their children to bite on; but if their gums be ſo inflamed that they will not bite any thing, and it has increaſed ſo far as to threaten a gangrene, we muſt repeatedly touch the dark red places with honey of roſes, (*mel roſarum*) in which is mixed a few drops of *ſpiritus ſal. marini*. *See Van Swieten's Comment.* iv. p. 748.

We may diminiſh that painful ſenſation, by giving to the child *ſyrupus è Meconio Ph. Lond.* as much as is ſufficient to procure it a little reſt. But this remedy ought at firſt to be given by degrees, ſo that we may find out how large a doſe is requiſite towards quieting the child, whenever it again becomes uneaſy by the pains. As one child requires more or leſs than another, we cannot therefore fix upon any certain doſe; we may be ſure to avoid all miſtakes by giving only half a ſcruple every half hour, omitting it as ſoon as it procures relief. If for inſtance a dram has been uſed, and the child five or ſix

hours

hours after begins to ſhriek and be uneaſy, we then know ſuch another doſe will procure it reſt for the ſame length of time. Yet in the mean time we muſt not omit the application of the above-mentioned emollients, and give the nurſe nothing but cooling food and drink. But herein one thing is to be obſerved, that we give the child a ſufficient quantity of *Electarium de Manna* to prevent its being coſtive, or now and then to give a clyſter for the ſame purpoſe, as coſtiveneſs is the only inconvenience ariſing from taking this ſyrup, and as experience teaches us, that a ſlight diarrhœa is beneficial towards relieving the pains.

Should the diſeaſe, contrary to our expectation, baffle all our remedies (though I never as yet ſaw them fail) the child continually ſtrieking, is feveriſh, has ſtartings, and convulſive motions in the muſcles of the face, and ſuch other ſigns of approaching convulſions, our only recourſe is bleeding, or to apply leeches behind the ears; and if this is inſufficient we may give a larger doſe of *Syrupus è Meconio*, or add to it one or two drops of liquid laudanum (well knowing whether the diſeaſe is ſtill in the beginning) by which means convulſive pains may commonly be prevented; but ſhould this likewiſe prove inſufficient, and the gums redden and ſwell, they ought immediately to be cut down to the teeth. There is no kind of danger in this operation, provided none of the fibres of the fleſh are left acroſs the ſummit of the teeth; in which caſe the pain would become ſtill more violent, until it is cut off, which gives inſtant relief. The inciſion in the gums ought to be frequently fomented with a ſponge dipped in warm wine, in which ſome ſugarcandy has been diſſolved.

As a fibre is often left on cutting the gums, the ſame may alſo happen by the teeth themſelves working their way, though we ſuppoſe the tooth to be emitted, although the child is ſick as before, but upon a more minute examination, a fibre will be found to ſtop the progreſs of the tooth; this being cut off, the pains are relieved immediately, and without doing this, the child might have loſt its life.

As

As beneficial as a gentle diarrhœa is on theſe occaſions, it would be equally hurtful was it too violent, by making it reſtleſs and weakening it; ſhould a ſtrong evacuation come on, the child would be quite exhauſted, and probably by this means get convulſions and die. In the chapter on diarrhœas we may ſee what degree of looſeneſs is too violent, and the applicable remedies propoſed.

From the above obſervations it may eaſily be underſtood,

1. What children breed their teeth early and with eaſe.

2. Which on the contrary breed their teeth late and with pain.

3. How a child may ſuffer great pain, and alſo die, by dentition, becauſe its father had contracted ſome diſtemper, or its mother during her pregnancy has had much ſorrow, violent paſſions, uſed bad diet, or becauſe the nurſe's milk has been ſpoiled.

4. How neceſſary it is to accuſtom children early to have their gums rubbed.

5. Of what importance it is to know and diſtinguiſh the diſeaſes of children, and that ſuch a ſcience is not within the reach of a midwife's or nurſe's capacity.

6. That emollients only are ſerviceable when the gums are tender and inflamed.

7. That the brains of a hare, or the blood from the comb of a black cock, has no preference to other ſoftening remedies; as alſo that a wolf's tooth is not preferable to either poliſhed chryſtal, or any other hard ſubſtance.

8. On what occaſion the gums ought to be cut down; becauſe in the firſt period, it would be quite abſurd to adviſe this operation; but in the latter it may be uſeful when nothing elſe will relieve.

9. That reachings and gentle diarrhœas at this time ought not to be ſtopped.

10. That as ſoon as the child has got its firſt twenty teeth, we ought no longer to ſuſpect dentition as the cauſe of any illneſs; as the others do not make their appearance before they arrive at the age of ſeven years.

CHAP.

CHAP. IX.

Of the Aphtæ or Thruſh.

WHEN a child gets pimples or bladders in its mouth, which ſoon grow ulcerated, or with cruſts on them, it has the diſeaſe we call the thruſh. This is attended with many bad ſymptoms, and often endangers the child's life; for beſides that children ſhriek day and night on account of the pain, they are unable to ſuck, and conſequently ſuffer by both hunger and thirſt; if at this time they ſuck, the nurſe's nipples commonly will be excoriated and ſore: if the thruſh extends to the throat, they have a difficulty of ſwallowing; if it deſcends to the ſtomach, they will have many reachings and hiccough; and if it extends ſtill farther down in the bowels, the chyle will be prevented from entering the lacteal veſſels, and the blood is carried off by a diarrhœa: if this continues long the child muſt die for want of nouriſhment.

The thruſh is commonly of a white, tranſparent, or yellowiſh colour; the blacker it is, the greater is the danger, as all the black ſpots are mortifications. The deeper and nearer the pimples are to each other, the worſe the diſeaſe is. When the bladders or ulcers diſappear, and ſoon after return again in greater number, we judge it likewiſe very dangerous.

The thruſh alſo differs with reſpect to the part affected.

1. That which appears firſt upon the lips, gums, tongue, inſide of the cheeks, palate, uvula and tonſils, is the eaſieſt of cure.

2. It is very difficult when it deſcends to the fauces, ſtomach, and inteſtines.

3. It is ſtill more dangerous if it has reached the aſpera arteria and the lungs.

4. But the moſt dangerous of all is that which beginning in the ſtomach and bowels, aſcends to the throat, and appears in the fauces as a membrane of lard.

When

When the eſchars or cruſts at laſt fall off, it occaſions to the children much ſpitting, mixed with blood; but when thoſe on the inteſtines fall off, it produces great ſenſibility, and often looſeneſs or dyſentery, the excrements being tinged with blood. Theſe four kinds are eaſily diſtinguiſhable from each other. The firſt can be ſeen; the ſecond may partly be ſeen, and partly judged of, as the child then has a hiccough, and vomits, eſpecially when it ſucks, or it has a diarrhœa, the milk then being mixed with the excrements. When the child has the third kind, it is hoarſe, coughs a good deal, the ſound being as it were through a metal tube. We judge of the fourth kind, if the child has been affected for ſeveral days with a ſtrong fever, accompanied with great evacuation, is very reſtleſs and uneaſy, has a hiccough, and the tongue of a fiery red, with an inability of retaining what it ſucks.

Thoſe children are moſt ſubject to aphtæ, who ſuck old milk, or too thick, or too acrid; or by having their mouths unclean: thoſe alſo who fall to ſleep on ſucking, as generally then ſome milk being left in the mouth, which grows acid and acrid: as alſo thoſe who having been affected with fevers, accompanied with looſeneſs. But the thruſh generally appears in the time of dentition. The thruſh in the mouth is the moſt common kind, and may generally be prevented by the nurſe taking care to keep the child's mouth clean, which ſhould be examined every day. The beſt thing to effect this is, with a few ſage leaves well waſhed, and boiled in water alone, or mixed with a little white claret and clarified honey, and afterwards filtrated. A piece of linnen may be dipped into this and wrapped round the finger, ſo that the child's mouth may be dabbed all over gently, eſpecially where any white ſpot is to be ſeen.

But when this has been omitted, and the child has already got the thruſh, we muſt then give the nurſe, 1. Some of the above-mentioned powder for nurſes four or five times a-day, and order her to drink more than cuſtomary: 2. Prepare a juice of *rob. diamor. dianuc.* and honey of roſes, half a dram each,

to

to which add as many drops of *ſpiritus vitrioli*, as are ſufficient to give it a ſlightly ſouriſh taſte. With this juice we dabb thoſe places five or ſix times a-day where the thruſh appears, and a little after each time of touching them, before the child is permitted to ſuck, its mouth ought to be waſhed with a decoction of ſage, as before-mentioned; or with a ſolution of a few grains of white vitriol in warm water uſed in the ſame manner. I am fully convinced the thruſh may be cured in a few days time, if the above preſcriptions are rightly followed. If the gripes accompany this diſorder, they may be relieved by the remedies recommended for them: but above all, *magneſia alba*, either with or without a little rhubarb; becauſe if any acidity or ſlime is in the ſtomach and inteſtines, it ought to be immediately corrected and carried off.

When we find the thruſh becomes very painful by the violent ſhrieking of the child, we give the nurſe a little ſyrup of white poppies *(ſyr. è mecon. Ph. Lond.)* once or twice a-day. When ſhe ſuckles the child, after her having taken this, it will find immediate relief, provided her breaſts were empty when ſhe took it. The doſe is then only two drachms; but if her breaſts are full when ſhe is going to take this remedy, we may give her three or four drachms at once: or ſhould we rather chuſe to adminiſter any remedy to the child itſelf, we may ſafely give it once or twice a day, one or two drops, according to its age, of Dr. Jones's *panacea*. Dr. Riverius gave a whole grain of *laudanum* with ſucceſs to his own child. The worthy Mr. Boyle's remedy for the thruſh, is from experience found efficacious. The compoſition of it is as follows: Take two ounces of the juice expreſſed from *ſempervivum majus*, mixed with an equal quantity of honey; after boiling it, add to it as much alum as will give it a ſlightly auſtere taſte. Touch the aphtæ every hour with this. Some make uſe of the excrements of hens diſſolved in white claret, *(vin. alb. Gallic.)* and filtred, and this is alſo a very good remedy, if uſed as the former one. When the eſchars have fallen off, and excoriations left in the mouth, they ſhould be touched with the mucilage of quince

quince ſeeds alone, or mixed with an equal portion of *ſyrupus ſempervivi majoris.*

The thruſh being internal, deſcending to the ſtomach and inteſtines, we give the child as often as poſſible a tea-ſpoonful of a juice expreſſed from turneps baked, and mixed with an equal portion of *mel roſarum*; or mix a decoction of carrots with a little *mel roſarum*, and uſe it as the former. We may prepare another remedy from half an ounce of flax-ſeeds beat, and boiled with a pint of water, to nearly the conſiſtence of a ſyrup; ſtrain it, and add thereto two ounces of *mel roſarum*, and give it in the ſame manner as the others. The nurſe ought all this time to uſe the before-mentioned powder, and drink as before obſerved, that her milk may be diluted. When the ſcabs or cruſts begin to fall off, it is then neceſſary to give the child a gentle laxative, which ſtrengthens the inteſtines. Syrup of rhubarb is the beſt remedy for this purpoſe, given either alone or mixed with a few grains of pure rhubarb in powder. The ſafeſt way of giving it, is by ſmall quantities every three hours, until it operates. This precaution is very neceſſary, becauſe, as we have before obſerved, when the cruſts fall off, the bowels are very ſenſible, ſo that a ſmall doſe operates more at that than any other time. Should the child now have the leaſt ſign of a dyſentery, we muſt give it to drink freely of *emulſio Arabica*, (emulſion of gum Arabic) or a ſoup boiled of millet, water, and milk.

See the 10th ſpecies of Diarrhœa.

CHAP.

CHAP. X.

On Convulſions, and *Epilepſia Infantilis.*

THE nerves of children are very ſenſible and irritable; they are more numerous in proportion to their bodies, than thoſe of a grown perſon, and as they have many juices or fluids, their nerves are ſo much the more ſoftened. They are alſo covered with very thin membranes, which makes their ſenſation ſo much the greater. For this reaſon children are ſubject to ſtartings, and theſe, at what time of life ſo ever they happen, are called convulſions. But when the whole body is thus affected, and the face at the ſame time appears bluiſh, it is then called an epilepſy. This diſeaſe is very nearly a-kin to the true or genuine epilepſy, and therefore has acquired the name of *epilepſia infantilis* by phyſicians, but Hippocrates called it *eclampſia.*

This diſeaſe appears to be very dangerous. It is by no means ſo eaſily cured as prevented; therefore it is of importance to be attentive when a child is going to be affected with it. We have great reaſon to apprehend its coming, if the child ſmiles in its ſleep, and more eſpecially if it does ſo when awake. Theſe ſigns however are of little conſequence, if unattended with others. Our apprehenſions of an imminent epilepſy are much better founded, if the child has ſome obſtipations, or fever, or gripes, or a difficulty of making water and of teething, or if its nurſe has been frightened, or has uſed external remedies againſt the ſcab, or when we know that it has worms. When the child afterwards begins to diſtort it eyes, and turn them towards its noſe or upwards, and grows bluiſh in the face, the diſeaſe is then on the point of appearing. The body either will be convulſed at once, or all its limbs ſucceſſively, the jaws are locked, and its mouth full of ſlime. This remains for a longer or ſhorter time, till the child falls into a profound ſleep; it awakes at length, and ſeems to be tolerably well.

If the cauſe is not removed in this interval, the fit will generally return the next and third day, and at the ſame hour. The diſeaſe then affords a truce for ſome time, but may return as ſoon as the ſame or any other cauſe affects and irritates the nerves. At all times a child may not get off ſo eaſily, but even loſe its life. The paroxyſm or fit of an epilepſy conſiſts of two periods, the firſt containing the convulſions, and the ſecond their conſequences, which are a rattling noiſe in the breaſt, and a profound ſleep. It is under the former of theſe that they die; and as they lie in a ſtate of an apoplectic fit, they are ſaid to die of an apoplexy, which in ſome meaſure is true. We find in the news-papers many accounts of children, ſaid to have died of apoplexies, tho' their true cauſe has been the epilepſy.

Many things may cauſe this diſeaſe; therefore in the cure of it, we ought to know what is the preſent cauſe. In general it is not the epilepſy alone which we have to cure, but in ſome certain children it is produced by a particular cauſe. I ſhall therefore enumerate all the cauſes, the method of diſcovering them, and the remedies againſt each kind.

1. *Meconium* will cauſe an epilepſy, if not ſufficiently carried off, by growing acrid in the body, and by irritating the inteſtines: for this reaſon then it is very neceſſary that a new-born child has, for the firſt days, three or four ſtools a day. From what has been ſaid, we may eaſily know when the diſeaſe ariſes from this cauſe, and it may be removed without difficulty by a clyſter prepared of ſix ſpoonfuls of tepid milk, four of oil, and a little ſugar beat, and may eaſier be prevented by the electuary of *manna*, as already mentioned p. 14.

It alſo happens, that older children are ſometimes very much obſtipated: their excrements then grow hard, or acquire ſome acrimony, either of which by preſſure or irritation will cauſe an epilepſy. We then enquire of thoſe who have the care of the child, whether it has been coſtive at all; we feel on its belly to find whether it is ſwelled, or if there is any hardneſs, and in that caſe a clyſter, as already mentioned, muſt be immediately injected: or we may give

give it the electuary of *manna*, or a little ſyrup of rhubarb, with an equal quantity of cold expreſſed oil of almonds, or inſtead of that good olive-oil and a little ſugar: of this we may give a tea-ſpoonful or two, every three hours until we judge it will operate, by hearing a noiſe it cauſes in the lower part of the *abdomen*. The rhubarb ſtrengthens the bowels, and enables them to preſs out the excrements; theſe are looſened by the ſugar and the ſyrup, and ſmoothed and made ſlippery by the oil. It is upon this account phyſicians pretend to relieve children ſubject to obſtipations, by giving them morning and evening a little oil of olives for ſome time. I believe it is very ſerviceable to procure an inſtantaneous relief; but cannot help thinking that if uſed for any time, it muſt injure the ſtomach, leſſen the periſtaltic motion of the inteſtines, and conſequently lay a foundation for coſtiveneſs.

2. Gripes are the moſt common cauſe of the epilepſy in children: by ſucking too much they will be affected with gripes*, or by ſucking of a corrupted milk, or from their ſtomach and inteſtines being too weak. I have myſelf clearly found, that a weak child may get the gripes without the leaſt fault of the nurſe, as the following inſtance plainly ſhews. Two children being ſuckled by the ſame nurſe, each had no more or leſs than what was ſufficient. The oldeſt thrived always very well, but the weaker had continually gripes, with green excrements, and with a general indiſpoſition. Though it afterwards got its own nurſe, both this nurſe and the child were obliged to

* A child will ſuck too much, if the nurſe has that idle cuſtom of always quieting it, by giving it the breaſt: its ſtomach thus overloaded, the milk grows acid, and coagulates: it alſo gets the gripes, if rocked ſoon after being ſuckled, as the milk then curdles in the ſtomach as when ſhaken in a bottle: for this reaſon a child ought never to be put into a cradle ſoon after being ſuckled; but ſhould be put upon the nurſe's knee, its belly and back gently rubbed all over, till it diſcharges ſome wind. The ſleep it takes then, will always be ſound.

uſe proper remedies. It was kept alive, but did not enjoy any ſettled health, until by degrees it had gained conſiderable ſtrength.

The ſigns of a child's having the gripes, may be ſeen in the chapter on that ſubject.

In an epilepſy ariſing from this cauſe, we ought to inject a clyſter during the fit; for as the child is at this time unable to ſwallow any thing, it is uſeleſs to pour any thing into its mouth. As ſoon as the fit is over, we give the nurſe ſome of the before-mentioned powder for nurſes, ſee p. 19. to take ſeveral days together, as much as will lay on a knife point: this is to be taken four or five times a day, and the child muſt be treated as above preſcribed in the Chapter on Gripes.

They muſt both continue the uſe of the ſame remedies until the child's excrements have acquired their natural colour; in the mean time, to prevent any returns of the ſame diſeaſe, we muſt take care, that the nurſe obſerves a regular diet, and ſuch a one as has already been mentioned in the Chapter on Nurſes.

Dr. Joh. G. Zimmerman in the *Acta Societatis Zyrich.* Vol. II. p. 396, gives us an inſtance of a child, who during the firſt months of its life, had frequent attacks of violent convulſions or epilepſies, which went off entirely, as ſoon as ever the child was taken away from its feeding on meal-pap.

3. *Paſſions of the nurſe*, are another cauſe of this diſeaſe; for the child ſucking her ſoon after ſhe has been by any means frightened, it will commonly be affected with convulſions; but among all the paſſions of the nurſe, none has ſuch violent effects, and dreadful conſequences, as when ſhe is exaſperated. This ſhe knows commonly how to diſguiſe, better than any other emotion of the mind; but yet we have reaſon to ſuſpect ſomething of this kind, if her eyes are fiery, the colour of her face changing now and then from a pale to a red. Our apprehenſions are yet better confirmed, if the child, being a little before healthy, becomes of a ſudden yellowiſh in the face, or if immediately after having ſucked, it is attacked with a ſudden vomiting, ſhortly after begins to moan, is reſtleſs,

and

and now and then has ſtartings, which are ſoon changed into an epilepſy. We may eaſily know, that all theſe ſymptoms do not proceed from the child's only having ſucked too much, as in that caſe it finds relief by puking; but to make ourſelves ſure of this, we ſhould enquire into it, from the other domeſtics. The greater number of children would certainly loſe their lives by the nurſes being exaſperated, if this paſſion was not in general followed by quite a contrary one: this is the fear, I mean, and her apprehenſions of being diſcovered, and diſmiſſed from the ſervice of the family. This laſt conſideration, in a great meaſure, compoſes the emotions of the mind occaſioned by the former.

We have already taken notice in the firſt chapter, how to prevent the child's being endangered, when the nurſe has been exaſperated, frightened, or affected by any other paſſion; but ſhould the child already have got convulſions produced by ſuch an effect, we muſt immediately inject a clyſter. The fit being over, we ought to take care, that the child's ſtools are both in proper quantities and regular; they may be promoted in the manner above obſerved, and the nurſe muſt alſo uſe thoſe remedies recommended for that purpoſe. If notwithſtanding this, the child on the following night is reſtleſs, has at times ſtartings, we ought to give it a little *ſyrupus è Meconio, ph. Lond.* (or ſyrup of white poppies) in the manner recommended at page 24. and the next day inject another clyſter, juſt two hours before the time of its being attacked the day before by the epilepſy *. The mother or nurſe ought alſo carefully to avoid ſuckling the child immediately after having received any unexpected joy or ſor-

* In a family were twins, and each had his own nurſe; they fell out with each other. The weaker child being ſuckled by its nurſe ſoon after, it inſtantly became weak to ſuch a degree, that it was unable to move hand or foot; it grew pale, and unable to ſhriek. Rheniſh wine being warmed as faſt as poſſible, napkins were dipped therein, and wrapped round the child. It recovered again, and another nurſe was procured for it afterwards.

row. We have inſtances of this kind, where children have been ſeized with the epilepſy, and been carried off by it.

Children will alſo get this diſeaſe by ſucking a nurſe at the time her menſes are upon her: the obſervations of phyſicians are filled with ſuch inſtances. It may either be owing to the great pains and gripes theſe diſcharges are attended with, or to the woman's mind being more ſenſibly affected at this, than at any other time. Which ever of theſe are the cauſe, the child ought by no means to ſuck during that time; and if the epilepſy has already attacked the child, we firſt inject a clyſter as before ordered, and after it has operated a little, *ſyrupus è Meconio, ph. Lond.* or ſyrup of white poppies, muſt be given to it.

4. *Difficult dentition*, and the children at that time not having looſe ſtools, is the fourth cauſe of the epilepſy; but the convulſive motions are generally more confined to the face at that time. We may learn how to prevent and cure this by referring to the Chapter on Teething. During the fit we can do nothing more than adminiſter a clyſter; but if the diſeaſe is in its infant-ſtate, and attended but with little fever, the child crying continually, has ſtartings during its ſleep, or is very reſtleſs, then we may boldly give to it one or two drops of Dr. Jones's *panacea*, or of Dr. Sydenham's *laudanum liquidum*. This may be taken in any convenient liquid ready at hand: it may alſo be repeated once or twice, if judged neceſſary, and the doſe carefully aſcertained by the then attending phyſician: by theſe means we may be ſure of preventing convulſions, and their returns too; but if the child ſhould have a fever, it ought either to be bled, or leeches applied upon its temples. See the Chapter on Dentition.

5. *Scabs repelled*, if they cauſe an epilepſy, may eaſily be known; for ſhould the child have had any eruptions, and by being expoſed to the cold, or the ſcab anointed, it has thereby been more or leſs repelled, it is pretty certain the diſeaſe ariſes from thence. During the fit, all we can do, is to inject a clyſter, and when it is over, the nurſe ought to take a little

flower

flower of ſulphur, the quantity of half a drachm, morning and night, in a little warm milk; or we give her every two or three hours a table-ſpoonful of the following camphorated mixture.

℞. *Camphoræ* ʒ ß.
Sacc. Alb.
Mucilag. g. *Arabic. ana* ʒj. *tritis in mortario vitreo & adde Aq. Flor. Ulmariæ, (or meadow ſweet)* ℥vj.
Syr. Baccis Norlandicis, g. ſ. *M. Dr. ut ſupra.*

We ſhould beſides, if in our power, cauſe the child to ſwallow a grain or two of muſk, previouſly well rubbed with ten grains of ſugar, which ſhould be repeated once or twice a day *; if we can procure the ſcabs to appear again, the child will be ſaved for this time. What relates farther, either towards the cure or prevention of this diſeaſe, will be ſpoken of in a particular chapter towards the concluſion of this work.

6. *The ſmall-pox, meaſles, and ſcarlet fever*, are ſometimes accompanied with an epilepſy juſt before the eruption appears. Happily it is ſeldom dangerous, but on the contrary is an indication of the ſmall-pox being of a benign or favourable kind: for this reaſon we give nothing for it, except what we intended for the diſeaſes themſelves, and which will be treated of in their proper places. It is ſufficient, in order to diſtinguiſh this ſpecies, to know that the child has not had the ſmall-pox before, and that the contagion, by being in the neighbourhood, may have been brought into the family by ſome one or other; and that the child has for three or four days paſt been affected with a fever, accompanied with the ſigns which exanthematic fevers commonly have. See fur-

* If this does not prove effectual enough, I find phyſicians recommend a very naſty cure: it is to put the child on a ſhirt, which a ſcabby perſon has previouſly wore; this occaſions by its irritation a freſh ſcab, and makes the former one re-appear. Mr. Deidier cured, by this means, a hydrops occaſioned by ſcabs repelled. See *Sauvages*, not. iii, ii. p. 431.

ther on this, under the proper heads. We may make ourſelves pretty eaſy in this caſe, as we know the epilepſy preceding it, is a good ſign. Notwithſtanding this, I have heard of children dying of convulſions; and that even after the exanthematic ſpots had made their appearance.

7. *Worms* commonly cauſe the epilepſy by violent fits, and frequent returns. Happily this ſort, as I imagine, rarely attacks children, whilſt they live merely by ſucking: for as yet, I have never obſerved any ſigns of worms in them, until they have had recourſe to other kind of food. This ſpecies is one of the moſt difficult to know, for I have frequently ſeen children of a ſtrong conſtitution to void worms, with ſuch a compoſure of countenance, that it is hardly poſſible to judge of it by looking in its face. We have pretty good reaſons to ſuſpect their being affected with worms, if it often ſcratches its noſtrils, has ſtartings whilſt aſleep, and ſwallows as it were, whilſt in that ſtate; its breath of a bad and ſouriſh ſmell; its mouth filled with water upon awaking in the morning, and its face frequently changing colour; if, beſides this, the child has a diſguſt for food, ſometimes a violent appetite, and ſometimes to that degree, that it ſeems almoſt fainting, if it does not ſoon receive its nouriſhment; if its ſtomach is hard, and ſwells a little before the uſual time of its eating; if it grows ſick of ſugar, or other ſweet meats, is well one moment, and complaining the next of its ſtomach, and of the gripes round about the navel; if it has a few reachings, ſometimes going away, and appearing at unexpected times, and without any manifeſt cauſe: but our apprehenſions are wholly confirmed, if it has a little before voided worms. I have ſeen ſeveral children affected with convulſions from this cauſe, and always during the fit found the navel prominent.

However violent the attacks of this kind are, they may eaſily be removed by injecting a clyſter of tepid milk, to which a little ſalt muſt be added in caſe the child is coſtive, otherwiſe not. The clyſter ought not to contain any oil, honey, or ſugar, becauſe as worms are ſaid to avoid theſe remedies, they remove further up in the inteſtines. In this manner we may

relieve

relieve convulſions, but they may return again, as long as the worms are kept alive and unexpelled, as their biting or ſucking occaſions another fit. We ought by no means long to neglect the means of expelling worms, as they increaſe in ſize and proportion according to the time they have been undiſturbed. This ſubject will be more minutely inquired into in another place, and therefore let it ſuffice here only to obſerve, that young children ought every day to eat honey, and freſh carrots, when ever they can be procured. Children more advanced in years, ought to drink ſome mineral waters, but more eſpecially bitter water (the *aq. Zeltherana*), and tho' its taſte is very diſagreeable, we may entice it to drink it, if in each glaſs ſomething is put, which they are fond of: for inſtance, a piece of ſugar, which by ſinking to the bottom, is a temptation for them to drink it, that they may eat it as ſoon they have drank out the glaſs. Thoſe ſmall white worms *(aſcarides)*, which live in the lower part of the inteſtines, are the eaſieſt to get rid off, by injecting a clyſter of warm mineral water, to which we may add a little ſalt, as it otherwiſe would not purge.

8. *Cold fits* of a fever accompanying this diſeaſe, I firmly believe to occaſion ſometimes the epilepſy: for the convulſions returned with each paroxyſm of the fever, and went off entirely, as ſoon as the intermittent fever was cured. A clyſter immediately ſtopped the fit; but in theſe caſes, as ſoon as the child was a little recovered from the feveriſh fit, I have given an emetic to it, with every poſſible precaution, and according to the method laid down at the end of the Chapter on Chin-cough. After the operation of this remedy, I have given the juſtly famous Jeſuits bark.

9. *Gravel*, or *the ſtone*, is ſometimes alſo found to affect children, and cauſe an epilepſy: providentially the gravel in children is a very rare diſeaſe in Sweden; and as they cannot, at ſo young an age, well point out their diſtreſſes, it is very difficult to diſcover whether the gravel is the cauſe or not. We may judge it ſo, if the child cries whenever it makes water, it being

ſometimes of a ſudden ſtopt, or much voided at once, the child moaning all the time. If we find that its parents have had the *arthritis*, gout or gravel, our ſuppoſition in a great meaſure is confirmed; and ſtill more ſo, if by introducing the finger into the *rectum*, and carrying it forwards to the bladder, any thing hard and moveable is felt; but no kind of doubt remains if a ſtone is felt by the catheter.

During the fit the child ought to be bled, and ſeveral clyſters ſhould be adminiſtered: at firſt they may be prepared of three or four ſpoonfuls of warm milk, and an equal quantity of oil, with a little ſugar, but afterwards of oil alone. We may make a poultice of flax-ſeeds beat, mixed with a little ſaffron and milk; with this we fill two bladders half up, and apply the one above, the other below the place affected; taking care they are conſtantly kept of a moderate warmth. Luke-warm baths are alſo of great efficacy. We may give internally a palliating milk, prepared from an infuſion of mallow flowers, *(infuſum flor. malvæ)* oil of almonds, the yolk of eggs, and a little ſyrup of white poppies, *(Syr. é Mecon. Ph. Lond.)*: the proportion is this; half a pint of the mallow infuſion, an ounce of cold expreſſed oil of almonds, half the yolk of an egg, and two drachms of the above-mentioned ſyrup; ſhake them well together in a phial, and give it to the child to drink by degrees until it finds relief.

10. *Theriaca*, *Diaſcordium*, *Philonium*, and other remedies of that kind, in which are contained opium, have already been mentioned as prejudicial when improperly given. Phyſicians have enumerated many ſad inſtances of the death of children, or at leaſt the epilepſy being brought on by the nurſe's giving them theſe remedies. It is our buſineſs then to prevent, if poſſible, the nurſe's or other ignorant people ever being informed of the name of opiates; the moſt difficult thing is to find out when the child has taken any thing of this kind, as it is generally done ſecretly: for the truth of this we muſt enquire ſtrictly, from the other people of the houſe; and if nothing certain can be inferred from thence, we muſt then judge from

the effects opium has upon the human body. The ſymptoms ariſing from having taken it, are, a quick pulſe, heat, ſhort and difficult reſpiration, ſweats ſmelling not unlike opium, coſtiveneſs, and frequent urining; the face appears red and puffed up, and the iris dilated; the blood flows towards the head, and occaſions a giddineſs, with a peculiar compoſure of the mind, either aſleep or awake, or a great propenſity to ſlumber. If we find out that any opiate is the cauſe, we immediately give the child ſome milk-warm water, to which is added a little butter, or oil, afterwards irritating the *fauces* with our finger or a feather, in order to excite a vomiting; if this does not ſucceed, we then inject a clyſter, with a little ſalt, rub its feet with a fleſh bruſh, and apply to the ſoles of them a ſtimulating cataplaſm until the ſkin becomes red. Its head muſt be fomented with warm vinegar, and a ſponge dipped in ſtrong vinegar put to its noſe. Could the child be bled, it would be of great ſervice, but of much greater if leeches were applied to its temples. I ſhall not mention acids taken internally, although they are the moſt powerful in correcting the bad effects of opium: as in general we do not think theſe remedies ſo applicable to tender children, unleſs thoſe before preſcribed ſhould prove inſufficient. In the ſame manner we proceed in convulſions ariſing from having eat any poiſonous plant; as for inſtance the root of henbane (*Radix Hyoſcyami*) or the berries of the deadly nightſhade, (*Atropa belladonna Linn.*) or any thing ſimilar, which through imprudence or ignorance we ſometimes lay hold of. The beſt antidote and cure is, firſt give them good vinegar, and afterwards an emetic.

The epilepſy occaſioned by venereal acrimony, will be mentioned in another part of this work. Want of food will cauſe convulſions; for inſtance, the nurſe's milk being dried up, and her concealing it; this may eaſily be cured by procuring another nurſe. When this diſeaſe ariſes from ſtrong and violent evacuations, they ought to be ſtopped, as may be ſeen in the chapter on vomiting and diarrhœa.

There are inſtances upon record by phyſicians, of convulſions or the epilepſy in children, occaſioned by their

their ſwallowing ſome blood, at the operation of cutting the tongue-ſtring: in this caſe we eaſe them either by a gentle emetic, or a little ſyrup of rhubarb, and a clyſter.

Tickling children is very dangerous: they may from that get convulſions, and even loſe their lives; as may be ſeen in Dr. *Van Swieten*'s *Comm.* iii. p. 402, and Dr. *Robinſon* on the ſpleen, p. 148.

We obſerve in general,

1. That the ſecond, third, fourth and ſeventh ſpecies are the moſt common.

2. That the child, if robuſt, ought to be bled, and is ſomething more than a year old, and not weakened by any other diſeaſe; notwithſtanding, the applying of leeches is preferable to bleeding.

3. That during the fit, ſomething ought to be introduced into the mouth, ſo as to prevent the tongue being hurt.

4. That clyſters are not only the beſt, but the moſt uſeful remedies during the fit, as they cannot ſwallow any thing in the heighth of each paroxyſm; for whatever we attempt to give them internally, generally runs out of the mouth again. Warm baths are generally ſerviceable, as they calm the convulſions ſo much, as they are able to take ſomething internally.

5. Wrapping them up during the fit in warm rheniſh wine, is of an incomparable effect, as I have frequently experienced. Poorer people may, in lieu of this, apply a piece of linnen ſoaked in warm brandy to the child's ſtomach.

6. That the epilepſy is not to be prevented by hanging round the child's neck the officinal root of vervain, *(Radix Vervena)* as I have known this preventative uſed by many children, who notwithſtanding have frequently had convulſions.

Laſtly, we may obſerve, to the great comfort and ſatisfaction of the parents of thoſe children ſubject to convulſions, or the *epilepſia infantilis*, that they need not be apprehenſive of its changing into the true epilepſy; for it generally diſappears by degrees, as they grow older and acquire more ſtrength: this is owing to the ſenſibility of the nerves, (which has been before

before obſerved is the cauſe of convulſions in children) being by that time diminiſhed *. In the mean time the child's parents ſhould minute down every thing that happens to the child before, during, and after each fit; whether or not it ended with a reaching or looſeneſs. Alſo if any thing is obſerved in the child's diet, nurſing, &c. which occaſions the fits to be more or leſs violent, or more or leſs frequent: this will be of infinite ſervice in conſulting with a phyſician, who by ſuch a minute account will get a greater knowledge of the nature of the diſeaſe, and conſequently be better able to cure it. It will alſo be of uſe to the parents, as from theſe obſervations they will not only learn the preventatives, as well as the means of cure: for inſtance, if they obſerve the fits returning every fortnight, and end each time with a looſeneſs or a vomiting, they may eaſily perceive that in the firſt caſe the child ought to take, for three or four days running, a gentle laxative, beginning about the tenth or eleventh day after the laſt fit. In the ſecond caſe, as the paroxyſm ended with reachings, an emetic ought to be given in the ſame manner as above ordered, ſo as to avoid all ſlimes before the time the convulſions are expected to return. When the epilepſy returns every fourth week, we judge it to be then owing to the nurſe having her menſes; and if upon enquiry we find it ſo, we muſt not permit her to ſuckle the child at that time, as ſhe then cannot help being exaſperated even by any trifling matter, and

* By this we find that as we advance in years, we loſe our ſubtler ſmell, taſte, hearing, and ſight; and that the nerves in the bladder and inteſtines, alſo loſe their irritability by degrees, and that they do not ſo eaſily excite towards the neceſſary evacuations as in the younger years. In old people they are proportionably leſs, as they do not increaſe in this part as in the other parts of the body; they alſo loſe by degrees their ſoftneſs, and conſequently in childhood are the moſt irritable. How can they then be ſaid to have any tenſion? Dr. *Hillary* tells us that the children in the Iſle of Barbadoes are ſo ſenſible, that they get convulſions by even the leaſt noiſe. *See V. Haller's Elem. Phyſiol.* iv. 203. 294.

often

often to the imminent danger of the child. When the child has ſtinking breath a day or two before each fit, we then ſuſpect it to ariſe from worms or a weak ſtomach, and as ſuch, conform both to the cure and diet thereof. The flowers of *Cardamine pratenſis*, half a dram for a doſe, are recommended by Mr. *Baker*, in Medical Tranſactions, by the college of phyſicians, vol. i.

With regard to the *fraxinella*, time will convince us of its efficacy in the cure of the true epilepſy. It is a remedy much approved of, by that worthy friend of mankind, Mr. *Stoerk*.

CHAP. XI.

On the Looſeneſs, *or* Diarrhœa *of* Children.

STOOLS thin and looſe, and more frequent than uſual, are called a diarrhœa. By the periſtaltic motion of the inteſtines the ſtools are promoted; by the natural *mucus* filtrated from the blood by their glands the bowels are kept ſmooth; by means of that vapour, or ſteems ariſing from the pores of the *vaſa exhalantia* in the *œſophagus*, ſtomach and inteſtines, the excrements are prevented from becoming hard. This vapour is again abſorbed, and re-enters the blood by the *vaſa lymphatica*, or *bibula*. The *ſaliva* or ſpittle, which is ſwallowed, promotes alſo the ſame. The gall is diluted by that humour, which the ſweetbread *(pancreas)* ſeparates from the blood, and is continually flowing to the largeſt of the *inteſtina tenuia*; both theſe promote the digeſtions and ſtools; but it is chiefly owing to the gall, that the bowels are excited to their periſtaltic motion: for this reaſon it is, we find it ſo difficult in the yellow fever *(icterus)*, to procure ſtools: alſo when the gall-bladder is pierced: alſo when the gall is much weakened by the great abuſe of acid food and drink; as for inſtance, in the acid colic, called *colique de Poitou vegetale*. A diarrhœa may ariſe from whatever occaſions a greater quantity to remain in the bowels than uſual, or by any thing cauſing

cauſing the above-mentioned humours to be diſcharged in too great a plenty; or from any thing preventing the *vaſa bibula* from abſorbing thoſe liquids, and by whatever increaſes the periſtaltic motion. By eating and drinking in too great quantities, the ſtomach and inteſtines are unable to digeſt the food, and from thence will ariſe indigeſtions and crudities, which by their acidity, irritate in part, and increaſe the *motus periſtalticus*, and in part occaſion a greater flux of humours, juſt as we ſee a grain of ſand irritates the eye, and cauſes the tears to flow from thence. The ſame happens alſo when the gall is either too acrid, or is preſſed into the inteſtines in too great quantities: for inſtance, when we are exaſperated this happens; alſo by the blood being acrimonious, as the liquids ſeparated from it into the bowels, are of a ſimilar quality, and their irritation occaſions a greater flux of humours, and increaſes the periſtaltic motion: for this reaſon a diarrhœa is always preceded by rumblings of wind, which is an indication of an increaſe of the periſtaltic motion of the bowels. The ſame effect may ariſe from new beer; it is upon this principle that pills of yeſt are purgative; change of water has the ſame effect, eſpecially amongſt thoſe who uſe it for their common drink. Eating too freely of melons, has the ſame effect as water-melons, raſpberries, and other fruits, or by ſucking the inner bark of the firr in ſpring *; from the inſenſible perſpiration being obſtructed it is frequently thrown upon the inteſtines, and conſequently increaſes there the quantity of fluids: therefore thoſe ſubject to coſtiveneſs, may promote their ſtools by riſing early, as the perſpiration is by this ſomething diminiſhed. The ſame, though in a more violent degree, is occaſioned from the ſtronger purges, or from any purulent matter, which by a *metaſtaſis* is diſcharged from any internal or external ulcer; being ſometimes firſt abſorbed by the blood, rarely to the advantage of the patient, as it generally vitiates

* In countries where firrs abound, the people make very frequent uſe of the inner bark, which contains a very ſweet and palatable juice. *S.*

this

this fluid, and melts it as it were, ſo that the body, unable to retain it, carries it off, either by a nocturnal ſweat, or an incurable flux. The patient thus exhauſted, dies like a lamp wanting oil. The humours are alſo increaſed in the inteſtines at their glands, and their pores are quite relaxed and corroded at their orifices; alſo if the *vaſa bibula* loſe their power of abſorption, which is the caſe when their orifices are too relaxed, or ſhut up by ſlime, cruſts of the thruſh, ſmall-pox, or meaſles; or alſo ſhould there be any obſtruction in the liver, or meſenteric glands. They may even ſhut up by any acrimony in the guts, as what flows from thence by irritating and increaſing the *vaſa exhalantia*, or perſpiring veſſels, occaſions a contraction of the abſorbent veſſels.

The urine in a diarrhœa, is in much leſs quantity than before, and is alſo redder than uſual; it is therefore a good ſign, when it is diſcharged in a greater quantity, and its colour is clear. This ſhews a leſs flux towards the inteſtines, and a more equal diviſion of the fluids, in order that they may alſo dilute the urine. By this we learn the reaſon of our being obſtipated by drinking mineral water, when it is carried off too ſoon.

By the ſame reaſon we judge of a diarrhœa's going off, when the patient falls into a profuſe moiſture, or ſweat: therefore thoſe, who uſe hard labour, ſweat much, or frequently urine much, are generally ſubject to coſtiveneſs: for this reaſon did Dr. Riverius cure himſelf of his diarrhœa, by means of the warm bath.

Reachings in a diarrhœa occaſion frequently ſome good change, partly by diminiſhing the matter occaſioning the flux, partly by cauſing a *motus periſtalticus inverſus*, and partly by ſhaking ſomething looſe, which was before adherent, and irritating in ſome part of the inteſtines.

A diarrhœa in a conſumption ſhews that the patient approaches to his end; if this evacuation does not relieve other internal or external ulcers, it will then haſten his death. The ſame is to be obſerved of a diarrhœa in a dropſy; purging medicines are therefore prejudicial in that kind of hydrops ariſing from a weakened

weakened or corrupted ſtomach and inteſtines, or from obſtructed perſpiration. In this caſe they would ſtill weaken the bowels, and hurt the digeſtion. They alſo obſtruct perſpiration, and diſpoſe the body in the ſame proportion to abſorb the moiſture of the air by the abſorbent pores of the ſkin. In wounds of the head they occaſion great miſchief, likewiſe to women in child-bed, and during their pregnancy. In ardent fevers, unleſs when the ſtomach and bowels are filled with crudities, they are prejudicial.

As long as a diarrhœa is unattended with a fever, does not diminiſh the appetite or ſtrength, the gripes are not violent, and the patient upon going to ſtool finds himſelf eaſier, it ought not to be ſtopped: by ſuch an evacuation, we are freed from a quantity of crudities or ſtagnant humours in other parts of the body, which might otherwiſe have occaſioned more dangerous diſeaſes.

We ought more eſpecially to be cautious in not ſtopping a diarrhœa in thoſe affected with pains of the head, or on either ſide of it, *(migrain)*; with colds or rheumatic pains of the neck, eyes or ears; nor in thoſe who have the *anaſarca*, as a looſeneſs is then often beneficial, as it is alſo when it appears in dentition.

A diarrhœa, when carried too far, ought to be ſtopped, otherwiſe the inteſtines would loſe their digeſtive faculty, by being too much ſoftened and relaxed: thoſe fluids requiſite for digeſtion are carried off, by which the blood not being diluted with a new and ſuitable milky juice *(chylus)*, grows acrid, and unfit for the ſupport of the body, which then pines away, its ſtrength diminiſhes, the legs and feet ſwell, and either a conſumption or a dropſy at laſt cloſes the ſcene.

It becomes too inveterate, when joined with fever, diſguſt for food, violent gripes, a weakneſs increaſing after each ſtool, and the excrements being of an unnatural colour and ſmell, and no eaſe to be found in thoſe diſeaſes the patient had previous to the diarrhœa, which was expected would be of ſervice: beſides if we know that the patient has had a good ſtomach, has not overloaded it, has taken much exerciſe, as other children, we then ought to ſtop it early;

otherwiſe it would degenerate into an habitual diarrhœa. We ought to avoid every thing that might occaſion a diarrhœa in the months of July and Auguſt, when the days are hot, and nights cold, as it might eaſily degenerate into a bloody flux. From what has already been obſerved above, we find there are many kinds of diarrhœas; but I ſhall enumerate thoſe only to which children chiefly are ſubject.

Firſt Species.

The younger we are, the eaſier are ſtools procured, and alſo ſleep; but the more we advance in years, the more coſtive and reſtleſs we grow: for this reaſon a tender child at the breaſt, ſucking freely, and having three or four ſtools every day, ought not to be looked upon as having a diarrhœa.

At ſo early an age as this, they are rarely affected with this diſeaſe, and whenever it happens, it ariſes from either the mother or nurſe having neglected the child, or from their having a corrupted milk. They neglect it by not adhering to the rules laid down in the Chapter on Nurſes: eſpecially if they allow its feet and ſtomach to catch cold by hanging wet clothes in the ſame room to dry; by the nurſe's ſuckling her child too often, or whenever it cries, or by ſuckling it in the morning before ſhe has eaten any thing, or by giving it hard food before it has gotten its teeth, or by her feeding too often on ſalt meat, or much fruit, cucumbers, berries, acid drink, or by her having the gripes, without complaining and being cured of them firſt; by changing the nurſe, and giving the child one whoſe milk is younger. What are the requiſite qualities for approving a nurſe's milk, may be ſeen by referring to the above quoted chapter.

Thoſe therefore, who have the management of children, ſhould adjuſt theſe matters, and for the future take better care of the child; but if, notwithſtanding their cautions, the diarrhœa ſhould continue, we muſt give the nurſe ſome of the powder ordered in the Chapter upon Gripes, (which ſee), and rub well the child's ſtomach with a little balm of nutmegs; or with ſome of the following compoſition: Take of

Theriaca

Theriaca, two drachms,
Balm of Nutmegs, one drachm,
Oil of Cummin, ſix drops. Mix them.

Spread this upon a piece of thin leather, and apply it to the child's ſtomach. Should it be requiſite, we may give a clyſter of milk, with a little white ſtarch, once or twice. If this diſeaſe is occaſioned by the gripes, we muſt uſe the remedies againſt them.

Second Species.

If a child eats and drinks in ſuch quantities, that the food cannot be digeſted, the quantity alone will occaſion a diarrhœa, by reaſon of its weight and irritation.

Food having been eat, that is bad in reſpect to quality and quantity, undergoes the ſame change in the ſtomach and bowels, as if we were to keep it in any veſſel, equally warm and moiſt with that of the ſtomach: that is to ſay, it will acquire an acrimonious quality, which would irritate and cauſe a diarrhœa. For a further explanation of this ſee the Chapter on Coughs, eſpecially in coughs of the ſtomach, and of vomits, the fourth ſpecies, where the ſigns and different natures of crudities are taken notice of.

This ſecond ſpecies is the moſt common, and ought not by any means to be ſtopped haſtily, as this carries off the cauſe which produces it, and which by being retained, would occaſion more dangerous diſeaſes. Should it not go off ſpontaneouſly, but the gripes increaſe, much rumbling felt, and the patient becomes much weaker, we are then obliged to relieve it by remedies, and as in general it is accompanied with loſs of appetite, and a diſguſt for food, an emetic would be of great ſervice, and ſhould immediately be given.

Should there be no kind of loathing, but gripes and wind only, we then give a little rhubarb, eight or twelve grains in powder, according to the age of the child; or we may give it a little elixir of rhubarb, without ſugar, a tea-ſpoonful or two; or a little of the rhubarb-tea (ſee the Chapter on Vomiting) to the quantity of two tea-cupfuls; ſometimes a ſingle doſe

proves ſufficient, and at other times it is requiſite to be repeated two or three mornings ſucceſſively, eſpecially in thoſe who have lived irregular.

If by the ſigns mentioned in the Chapter on Vomits, we ſhould find out the nature of the crudities, we muſt then uſe the remedies recommended for each kind, either ſeparately or mixed with the rhubarb; for inſtance, if they ariſe from acidities, we join to the *magneſia alba* ſome of the powder of oyſter-ſhells, or diſſolve ſome *ſal Tartari* in the elixir of rhubarb: if they are owing to putridics, the patient muſt drink ſome limonade, or almond milk, &c. their drink ought alſo to be thin rice or millet gruel, which we make into almond milk, by the addition of ſome ſweet almonds: if the child is very weak, we then give a little white wine whey; or ſhould it at this time be judged neceſſary to ſtop the diarrhœa, we may infuſe in warm whey a piece of cinnamon and ſome toaſted bread, ſtrain it, and when cool, give it ſome to drink; when the crudities are owing to acidities, weak fleſh-broth is by much the beſt.

If the diarrhœa notwithſtanding continues, it will then be requiſite to apply to its ſtomach the preparation at page 49. over this we lay a napkin, and a piece of thin board, to preſerve the warmth better. We give the child dried bilberries to eat; the richer people may apply the *emplaſtr. ſtomach. Ph. Londinenſis* upon the ſtomach; but if the diſeaſe does not yield to this, we give it a powder prepared of

Red Bole, ten grains,
Gum. Tragacanth. five grains,

after every looſe ſtool. This powder may be taken in a liquid prepared of two drachms of *gum. Arabic.* or gum of cherry-trees, diſſolved in a quart of thin ſoup, rice, or millet gruel; or we diſſolve two drachms of wax, ſtirring therein as much powdered oyſter-ſhells as it will take up, and give it as the former. At bed-time we may give a few grains of *theriaca* in either a little milk, or weak cinnamon water *(aq. cinn. ſimpl.)*: many have been cured by drinking milk, in which a drachm or two of thin ſlices of wax has been boiled. Others have met with the deſired effect, by drinking

drinking chicken broth, wax having been previouſly put into the chicken. Others again have been quite relieved by eating an apple or two with wax therein, and baked over the fire, ſo that the wax has been abſorbed into the ſubſtance of the apple. However, the rhubarb or the emetic ought always to be taken before any of theſe remedies, and they ſeldom fail of ſucceeding.

When the diſeaſe at laſt is ſtopped, we endeavour to reſtore ſtrength to the ſtomach and bowels, by the ſtomachic elixir, and a proper diet, taking care not to overload the ſtomach.

Should the child be attacked with a head-ach, or any other diſtemper, as ſoon as the diarrhœa is ſtopped, it gives us ſome reaſon to ſuſpect we have rather been too haſty in ſtopping it; and that there ſtill remains ſomething in the inteſtines, which ought to have been firſt carried off. It is then requiſite to give the child a little rhubarb again, in any of the forms above-mentioned.

To this kind belongs alſo that violent diarrhœa, which comes on during the uſe of mineral waters, and ariſes from having eat too many ſtrawberries the night before. It may eaſily be relieved by taking a little cinnamon-brandy.

Third Species.

When the orifices of the perſpiring and abſorbent veſſels, or thoſe of the inteſtinal glands, are relaxed to that degree, that the humours are as it were flowing from them into the bowels, and if they are not received there by the abſorbent pores, they will occaſion a dangerous diarrhœa, which might ſoon emaciate the patient.

This kind may eaſily be diſtinguiſhed from any other, by being unattended with pain, or gripes; the excrements having nothing purulent, or any thing unuſual in them; there are not any ſigns of crudities either; thoſe affected with this kind, are weak and pale, with loſs of ſtrength.

As it, for the moſt part, carries off all the humours from the body, the ſooner we ſtop it the

better; it may be done, 1. By giving the child dry food, and abſtaining from ſoups, butter, or any thing ſimilar, which would increaſe the laxity; its drink ſhould be water, in which a little cinnamon, or bitter orange peel, has been boiled, ſtrained off, and cooled. 2. By giving them a tea-ſpoonful of the chalybeate wine, two or three times a day, in a little cinnamon water, or any other ſteel tincture; or by a few grains of the *Æthiops Martialis*. The celebrated Dr. de Haen lays a great encomium upon the powder of an herb, called *lyſimachia vulgaris flore purpureo*.

This kind of diarrhœa ariſes alſo in conſequence of others being neglected, or ſuffered to remain too long; a circumſtance very frequent among the poorer people.

It is alſo a conſequence of ſorrow, ſudden fright and jealouſy. It is true, that children's ſorrows are of no long duration, but are ſoon forgot, unleſs daily renewed by a bad mother, or a teacher. Envy or jealouſy will frequently take place in a child, when it obſerves the other children more careſſed than itſelf. As long as the cauſe remains, the diſeaſe cannot be removed; but that once taken away, it rarely requires any other remedies, except thoſe abovementioned.

Fourth Species.

If children are ſuffered to play late in the evenings, expoſed to the open air, during the ſummer ſeaſon, or harveſt, when the days are ſultry, and the nights chill, they will either catch cold in the head, or breaſt: get a *diabetes*, or will be affected by a diarrhœa, generally accompanied with gripes. The pores of the ſkin being a great deal opened in the day time by the heat, are ſhut up in the night by the cold: by this means the perſpirable matter being repelled, goes to the inteſtines, and occaſions a diarrhœa. If they lay down upon the ground to reſt, when warm and ſweating by exerciſe, they will get it much ſooner. Children have a very thin and ſenſible ſkin, therefore they ſooner feel the effects of heat and cold, as do all weak people. Robuſt people, whoſe ſkin by means

of

of hard labour, and coarſe linen, is become as thick as leather, are ſeldom thereby affected.

This ſpecies is eaſily known from any other, by the circumſtances already mentioned; its cauſe is alſo taken notice of. With reſpect to the cure, it is pretty eaſy; we ought at firſt to cleanſe the child's ſtomach and bowels by an emetic, or a little rhubarb, ſhould it be found loaded with crudities, which may be known by the ſymptoms mentioned in the Chapter on Chin-cough. Afterwards we promote perſpiration, by putting the child into a warm bed, giving it an infuſion of elder flowers (*flores ſambuci*), and applying to its ſtomach three or four ſheets of blotting paper, ſoaked in warm brandy, or rather in camphorated ſpirits, previouſly warmed over the fire in a deep pewter plate, and afterwards wrapped up in a thin linen rag. The diarrhœa generally ceaſes as ſoon as any moiſture or ſweat is procured; but if notwithſtanding it ſhould continue, and the gripes alſo, it would be beſt to give a little rhubarb once more, and at bed-time a little *theriaca*, to which we may add a grain of camphire. This may be taken in a little of the above-mentioned infuſions.

Fifth Species.

There is another kind of diarrhœa, which ſometimes affects children, that live upon much fat food, as pork, fat pan-cakes, or bread and butter. Rancid crudities will be generated from theſe, cauſing by means of their acrimony a painful looſeneſs with gripes. Phyſicians term this kind of diarrhœa *bilioſa*; as it alſo ariſes from a very acrid gall being in great quantities preſſed down into the inteſtines, either by violent paſſions, or becoming acrid during hot and dry ſummers, and in the harveſt time, when the perſpiration being retained by any cold, it will occaſion either a very violent fever, or a diarrhœa which prevents this fever, and unleſs this evacuation happens they can hardly be cured.

From the above-mentioned circumſtances, and alſo the excrements appearing yellowiſh, green, &c. we diſtinguiſh this ſpecies from the others; and notwithſtanding

ſtanding it is a very obſtinate kind of flux, it frequently prevents and cures pains in the ſtomach, nauſeas, oppreſſions, reachings, colics, intermittent and bilious fevers.

Therefore this evacuation ought not to be too haſtily ſtopped, but the rancid crudities, or acrid gall, ſhould be firſt diluted, ſo as the diarrhœa may not be too violent; this we procure by giving the child, by degrees, plenty of milk-warm water, or ſome whey made with the juice of limons, or barberries, or with vinegar, ſour bread, or hips (fruits of roſes), buttermilk well ſtrained, almond milk *(emulſio Arabica)*, mallow tea, or millet gruel. In the interim we promote the evacuation with a few cups of the rhubarb-tea already mentioned, or by a drink prepared of an ounce of tamarinds boiled in half a pint of water, and ſtrained off. Should it not yield to this, we muſt then ſtop it with ſix or eight grains of rhubarb toaſted, given after every looſe ſtool; or by a mixture of half a dram of *ſuccus cathechu* diſſolved in half a pint of water; or by ſome ſoup in which we have boiled plantain leaves *(folia plantaginis)*; or in caſe the gripes do not ceaſe, a few grains of *theriaca* towards evening.

We ought never to omit reſtoring ſtrength to the ſtomach and bowels, by means of convenient food, the ſtomachic elixir, *globus Martis (boule de Mars)*, or the chalybeate wine.

Sixth Species.

When any one by ignorance has given too ſtrong a purge to a child, it will thereby be affected with terrible gripings, pains in the abdomen, convulſions, &c. and even ſometimes loſe its life; we ſave it, by giving it a quantity of fat ſoup, warm milk, and oil, cream or freſh butter. It would be imprudent to give any aſtringent remedies before the purge is expelled the body, becauſe its retention would corrode and inflame the inteſtines: for this reaſon we give a clyſter of ſimilar remedies, with an intention of lining the bowels as it were, to lubricate them, to dilute, and by that means blunt and weaken the

phyſic,

phyſic. When the evacuation begins to decreaſe, we may then according to the child's age give a few paregorics: for inſtance, a drop or two of *Laudanum liquid. Sydenh.* in a little milk; taking care not to be too buſy in giving this. There are inſtances of its proving deadly by retaining the cauſe, as are related in the *Acta Edinburg.* tom. iv. n°. vi. where is mentioned a caſe of one, who by ignorance took ſix grains of *tart. emeticus*, which produced vomit and diarrhœa; but by taking twenty drops of *Laud. liquid. Sydenh.* in order to ſtop them, death was the conſequence.

Profeſſor *Cellarius* was more fortunate in his miſtake; he took all the purging pills at once for a deafneſs, which were to have been taken gradually in the courſe of ſeveral days: after he had found out his miſtake, he afterwards drank a quantity of ſoup with ſuch good effect, that the purge operated but moderately, and his hearing was reſtored.

Seventh Species.

When a diarrhœa ariſes from ſcabs, or other eruptions being repelled, it may be cured by the remedies recommended in that Chapter on Cough.

Eighth Species.

That kind of diarrhœa accompanying the ſmall-pox, is treated of in its proper chapter.

Ninth Species.

That kind ariſing from the contagion of the meaſles, is treated of in the ſame chapter, as its principal diſeaſe.

Tenth Species.

That diarrhœa which ſucceeds the thruſh by the falling off of the cruſts, and is thereby frequently tinged with blood, is already treated of in the Chapter upon *Apthæ*. The following remedies are in this kind of great ſervice.

℞. *Sperm. Ceti.*
Mucilag. g. Arab. ana ʒij.
Mixtis adde
Aq. Cinnam. S. V. ℔ ß.
Miſce agitando Dr.

The doſe is a ſpoonful every hour *.

OR,

℞. *Butyr. Ceræ Bat.* ʒ ß.
Mucilag. e. g. Arab. ʒj.
M. terendo & adde
Aq. Cinnam. C. Vino.
Syr. Diacodii, ana ʒj.
Decoct. Hordeat. perlat. ℔ ij. *M. Dr.*

The doſe is a ſpoonful every hour at firſt, and afterwards after each ſtool only.

Eleventh Species.

When the food is carried from the body quite undigeſted, and runs as it were through the inteſtines, as ſoon as received there, the child is then affected with a kind of diarrhœa, commonly known by the name of *lienteria.* This diſeaſe is without pain, which circumſtance, with thoſe already-mentioned, ſufficiently diſtinguiſh it from the other ſpecies It is generally in conſequence of ſome other kind of diarrhœa of long duration, bloody flux, thruſh in the ſtomach, or from any diſeaſe which by length of time has relaxed the ſtomach and bowels to a great degree, and impaired thoſe juices neceſſary towards digeſtion *(In Gottingiſche Gel Anzeigen,* n°. 135.): I have afterwards found it the learned Dr. *Vogel*'s opinion, that the diſeaſe ariſes from the too great irritability of the ſtomach and bowels, by which their periſtaltic motion is increaſed: the cauſe, as he thinks,

* Should the cinnamon water be good, it would probably be too pungent, in which caſe we may take ʒiß leſs of it, and in lieu of it add as much rice gruel.

is a quantity of *mucus*, or a bilious and ſour, or ſcorbutic acrimony: he propoſes therefore as a remedy an emetic and a purge, which ſtrengthens the ſtomach and inteſtines: ſometimes *anodynes* are given alſo. He ſeems to be in the right; this learned man has therefore given a very different view of this and the following diſtemper. In diſeaſes rarely obvious, we are obliged to copy from each other: this is the moſt dangerous kind, as the body, unable to receive any ſupport, muſt conſequently pine away; ſour eructations are a good ſign in this diſeaſe, as they ſhew the retention of the food, and its beginning to be digeſted.

When old people are attacked by this diſorder, they are ſoon carried off.

1. The children of the richer people, may be cured by adhering to the diet I have preſcribed for ricketty ones.

2. Wearing continually on the ſtomach the *emplaſtrum ſtomach. Londinenſis.*

3. By being anointed morning and night with a little balm of nutmegs on their back all along the ſpine: it ought every time to be well rubbed in with a warm hand.

4. Taking every day according to its age 20, 30, or 40 drops of *vin. chalybeat. Lond.* a little before dinner-time, in ſome *aq. cinnam. ſ. v.* And

5. By taking night and morning three of the following pills;

℞. *Extr. Cort. Caſcarill.*
Æthiops Martialis Pariſ. ana ʒij.
Syr. Cinnamon. q. 1. *M. ft. pil. pond.*
gr. ij. *ſol. lunæ obduct. Dr.*

Spaw water from the Pouhonner ſpring is alſo a good remedy in this diſeaſe.

Poor people ought to confine their children, as much as poſſibly their circumſtances will allow, to the above-mentioned diet, and uſe night and morning the chalybeat wine. In order to render the expence of this wine leſs, they may make it with the white French wine, inſtead of the Rheniſh, and it may alſo be taken in water where a little piece of cinnamon has

has been boiled. *Foreſtus* cured one of his relations with a pounded nutmeg, mixed in the yolk of an egg, and afterwards baked upon a hot brick.

A lady being affected with this *lienteria* during her pregnancy, being half gone with child, was cured by half a drachm of the *fabæ pechurei*, ſeveral other remedies being tried without effect.

Twelfth Species.

Children are ſubject to another kind of diarrhœa, which phyſicians have termed *fluxus cœliacus* *. Thoſe who have this diſeaſe are affected with gripes, and a violent purging, which is not continued, but comes on now and then, and all at once. Sometimes the excrements have an inſupportable ſtench, and at other times are void of any; their colour is various, as grey, yellow, red, brown, and ſometimes tinged with blood. The appetite at times is very great, and ſometimes changes into a diſguſt for food. The patient looks pale, is lean, pines away, and loſes his ſtrength; his hands and feet ſwell, the ſtomach is puffed up, and feveriſh ſymptoms come on; the child is troubled with wind; the meſenteric glands are obſtructed; and when the humours become more corrupt, the liver, ſpleen, and the large gland lying behind the ſtomach ſwells, and grows hard; the cauſe of this diſeaſe ſeems therefore to conſiſt in a corruption of the whole maſs of blood, but more eſpecially the digeſtive humours; becauſe when they are vitiated, they injure the ſupport in the inteſtines, and make the ſtomach and bowels loſe their ſtrength.

From this we find, that a *fluxus cœliacus* is a ſevere, tedious, and obſtinate diſeaſe; and is either a *cachectic*

* The worthy Archiater and Profeſſ. R. A. *Vogel*, in the year 1768 publiſhed a diſſertation called *Fluxus cœliaci genuina notio atque ratio expoſita*; where he ſhews that the latter phyſicians have been miſtaken in reſpect to this diſeaſe, and that the milky juice *(chylus)* is not carried off by the excrements. The great authority of Dr. *Ballonius*, whoſe reputation in other reſpects is well eſtabliſhed, has led us all ſucceſſively into this error.

itſelf,

itſelf, or at leaſt is accompanied with a ſimilar one. Emetics given with great precaution are requiſite in the cure of this diſeaſe, ſometimes laxatives of rhubarb, and afterwards ſtrengthening remedies given for ſome time together, as preparations of iron, and good ſtomachic elixirs, ſuch as I have already given the compoſition of. The diet recommended in the Chapter upon Rickets, is of infinite uſe here; if when we have put a ſtop to the diarrhœa itſelf, we ſtill have reaſon to ſuſpect, that the glands in the meſentery, liver, ſpleen, or pancreas are obſtructed, then the abdomen ought frequently and gently to be rubbed.

When the meſenteric glands are obſtructed, and become hard, the ſtomach alſo growing hard and puffed up, it is very difficult to remove, and requires a long time. The whole belly ought then to be well rubbed with a warm hand, or a piece of flannel. The child ought to ride about in a little cart, or carriage, and at times play with other children, and in the open air, whenever the ſeaſon will allow it; its drink ſhould be weak mead, or whey curdled by the white of an egg; but this milk ought to be taken from a cow, which has juſt calved, and has fed upon green graſs during the ſpring, and in a paſture where ſhe can get running water, and take ſhelter under the ſhade of the trees. Such milk as this, is the juice itſelf of the herbs, and has an excellent diſſolvent quality, as it is generally ſo thin, that it may be drank without being previouſly curdled: if any ſigns of acidity appear, the child muſt beſides uſe the pills of *offa Helmontiana*, (ſee the Chapter on Rickets), which correct and prevent acidities, diſſolve all tenacious humours, and conſequently are of uſe here; but for the cure of the obſtruction and hardneſs in the meſentery, we have ſcarce any more certain and powerful remedy than the *pil. e cicuta* or *conio* of Dr. Stork, which may be taken from 1, 2, 3, 4 grains every day, and ſometimes a larger doſe, drinking after it either weak mead or whey; we muſt begin with the ſmalleſt doſe, and increaſe it according to the child's age.

Should this cœliac flux be occaſioned from any cicatrice in the bowels, as ſome pretend to have ſeen, it muſt be incurable; it ſeems to me an impoſſibility that any one ſhould get the better of a dyſentery, where the bowels are affected to ſuch a degree as this.

Thirteenth Species.

It ſometimes happens that children are affected with a diarrhœa, where the excrements are mixed with purulent matter; this generally follows upon a ſevere dyſentery, or any inflammation of the bowels, meſentery, liver, pancreas, ſtomach, or the breaſt, which not having been reſolved, ſuppurates. We judge by the above-mentioned diſeaſes having preceded this, that the child has been affected with ſome internal boil: for inſtance, if it has been indiſpoſed, feveriſh and hot after dinner, or has in the evening its hands hot, red ſpots upon the cheeks, lips and tongue dry, little or no appetite, ſleep ſhort, ſweats during the night, its ſtrength and fleſhineſs emaciated: it is the ſame with any internal inflammation, as with an external one; the affected part becomes inflamed, hot, red, ſwelled, and painful. If the inflammation is not reſolved, it ſuppurates, and the boil is either opened by nature or art, and the matter is diſcharged: ſhould the tumour or boil not burſt of itſelf, and from our neglect have been prevented (thro' fear of hurting the children, natural among parents) from making any inciſion, the purulent matter *(pus)* becomes acrid, thin and corroding, is gradually abſorbed into the blood, cauſing ſmall irregular ſhiverings, and a conſumptive fever; the blood in the mean time grows corrupt, loſes its gluey and nouriſhing quality, juſt in the manner as when the white of an egg *(album ovi)* putrifies: the body and ſtrength both conſumes, the humours by being exhauſted decreaſe, night ſweats come on, and at laſt an incurable diarrhœa, which phyſicians call *colliquativa*, becauſe the blood is melted away as it were, which is in conſequence of this Thirteenth Species we here treat of, and is ſometimes called *diarrhœa purulenta*. It ſometimes

times happens, but not once in a thouſand times, that the ſuppurating matter being taken up by the abſorbent veſſels, and entering the veins, does not mix with the blood, but is carried along with the circulation to the reins or inteſtines, is there emptied, in the firſt caſe along with the urine, and in the latter with the excrements. An inſtance of this kind is to be ſeen in *Miſc. Nat. Cur. Dec.* 2. *Ann.* 2.

A boil in the loins diſappeared in the night preceding the day it was intended to be opened, and the purulent matter was carried off by ſtool. In the ſame work, *Dec.* 3. *Ann.* 2. *obſ.* 2. *p.* 6. is mentioned a large ſwelling *(tumor)* on the arm being cured by purulent ſtools. See alſo *An.* v. & vi. *obſ.* 281. *p.* 635.

But few are ſo fortunate as this, nor do we know any remedy that is able to prevent the blood's mixing with the purulent matter: in inflammatory diſeaſes the blood has acquired a quality of not mixing with the water the patient drinks, it running off quite clear and colourleſs; if we mix any thing of a ſoapy nature, for inſtance ſugar, or electuary of currents, or ſuch things, it then enters the blood.

Internal ulcers, from whence the matter has not a free and eaſy iſſue, are incurable. We are hardly able to cure thoſe from whence the diſcharge is free.

If the ulcer is in the bowels, or meſentery, or at leaſt diſcharges into the inteſtines, we have yet ſome hope left, unleſs it has already corroded through the guts, and part of it enters the blood.

The number of glands in the inteſtines are the reaſon of theſe ulcers becoming ſo often cancerous; we have however ſome inſtances of wounds in the ſtomach being healed up; but when they are in the liver or lungs, we have ſcarce any hopes of a cure, unleſs we know they are only upon the ſuperficies of thoſe *viſcera*; as that part of the lungs may the nadhere to the *pleura*; or the diſeaſed part of the liver may become attached to the adjacent parts, which generally happens during the time of inflammation. If a free diſcharge of the matter is procured by any external inciſion, the ulcers by this may be kept clean and healed: we have inſtances of this; otherwiſe we muſt endeavour to draw away the purulent matter

by ſome corroding remedy; for inſtance, apply externally *(cauſticum)* an artificial ulcer *(fontanella)*, or a *ſetaceum*, oppoſite the part affected. This ought to be done ſoon, and before the matter has acquired an acrimony, or corroding quality, or has began to enter the blood, and vitiate that fluid; ſome few ſucceſsful cures of this kind ought to encourage us to try further theſe remedies.

From what has been obſerved, it plainly follows that a purulent diarrhœa ought not to be ſtopped: if the matter goes off whitiſh, and of one colour, we may hope for a cure. All that we can do, is to order the patient a very auſtere diet, to abſtain from all hard and ſalt food, meat, and whatever occaſions a heat; and that in the ſpring he muſt live only upon the whey of ſuch milk as has been above-mentioned; afterwards upon butter-milk, water gruel, thin ſoups in which plenty of greens, as ſpinnage, chervil, endive, ſorrel, &c. has been boiled, and afterwards ſtrained off. *Seltzer* water *(aq. Zeltherana)*, mixed with milk; tiſans of the *Switzer* herbs, with milk and a little clarified honey: ſhould this be attended with gripes, we muſt then give towards bed time ſome paregorics; for inſtance the *confect. Japonica Edinb.* or ſome ſimilar remedies. If the diarrhœa is violent and frequent, we muſt then give ſome *rheum toſtum*, *ſuccus catechu*, *Æthiops Martialis*, *caſcarillæ extractum*, or ſuch things, although by this we occaſion the purulent matter to enter the blood; but neceſſity has no law. Balſamic remedies, ſuch as balm of *Peru*, myrrh, ſtyrax, &c. I have never as yet found of any ſervice; they heat conſiderably, increaſe the inflammation in the margins of the ulcers, and alſo the purulent matter by which the ulcer grows larger. We may expect ſome relief from the Jeſuits bark with honey of roſes given between the paroxyſms of the fever. A child that had a *diarrhœa purulenta* after a chin-cough of long duration, was cured by drinking a tiſan of roſes, milk-whey, and a little honey, and continuing its uſe a long time. An officer was alſo kept alive 7 years by this diet, his diſeaſe being an ulcer in the liver; all this time he was almoſt able to do his duty; he was at laſt affected with a dropſy *(anaſarca)*, and though

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the water was evacuated three times, it however got the better of him. He was opened after death, and a large ulcer found in the liver, which had burſt, and diſcharged itſelf into the gall-bladder *(veſica fellea)*, and from thence down into the inteſtinal tube. A nobleman of a middle age, being affected with this kind of diarrhœa after an inflammation in the liver *(hepatitis)*, lingered for the ſpace of eight years by means of the ſame diet, and died at laſt quite emaciated of a conſumptive fever. His diarrhœa was ſometimes ſo violent that I was obliged to ſtop it, which could not be done by any other remedy than roaſted acorns beat into a powder, and taken in water. I was alſo called to a gentleman towards the cloſe of his life, who was affected with an ulcer in the bowels, and a painful diarrhœa of long duration. He was only 27 years of age, and all my efforts to cure him proved ineffectual. His conſtitution had always been ſtrong, he had taken very little care of his health, but abuſed it in every reſpect, once eſpecially very raſhly expoſing himſelf to the cold, ever ſince which his excrements became looſe, in colour brown and tinged with blood, but without gripes. In hopes of freeing himſelf from this painful diſeaſe, he had according to the advice of ſome perſon or other, drank whey curdled with alum, from whence aroſe pains in the bowels, and gripes; a hardneſs remained in the right ſide, and an obſtipation for ten or twelve days, which could not be relieved by any laxatives; but was affected moſtly for the ſpace of half a year with coſtiveneſs. At laſt a ſhoemaker promiſed him a cure; this quack brought out of the ſea ſome loggs of birch wood ſoaked through, putting them into an oven previouſly heated, and placing them in an oblique direction, ſo as to collect that milk-coloured juice, which was expelled by the heat, and received into a veſſel below. The patient drank once of this preparation without effect, and three days after repeated it, and from that time was affected by the moſt painful rumblings of wind in the ſtomach, accompanied by a diarrhœa, and ſuch violent gripes, that he frequently bit ſeveral holes in his tongue, as ſeveral marks were to be ſeen thereof afterwards. Sometimes water was evacuated with his ſtools,

ſtools, and ſometimes purulent matter of various colours, and ſometimes reſembling bloody glands. Towards the end of his life he had a ſlight conſumptive fever, his legs ſwelled, and every other part of him was merely ſkin and bone. Nothing afforded him more relief than the *elect. è ſcordio.* or *confect. Japonica Edinb.* which only laſted eight or ten hours; but when during the night he had ſometimes 70 or 80 ſtools, I was obliged to let him chew and ſwallow a quantity of roaſted peaſe, burnt in the ſame manner as coffee-beans. The effect of this was, that he was always freed from the gripes and ſtools for upwards of three days together.

Fourteenth Species.

We have already mentioned that ſort of diarrhœa appearing at the end of conſumptions, or a dropſy, or where the purulent matter, from any internal or external ulcer, has entered the blood, and melted it as it were. It is called *diarrhœa colliquativa*, and is incurable; all we can do in this caſe, is to prolong the patient's life for a little while, by applying ſmall clyſters of milk with ſtarch, in which we may put a little brandy; or 10, 15, to 20 drops of *Laud. liq. Sydenh.* or we may prepare one of half a pint of milk, ʒ ß of *theriaca*, or of lime-water, *confect. Japonica*, and *balſ. Locatell.* previouſly diſſolved in the yolk of an egg. I have known half a drachm of the *Faba pechurei* taken now and then to relieve ſuch a diarrhœa for a fortnight in a patient dying of a conſumption, though I muſt confeſs it has frequently failed.

CHAP.

CHAP. XII.

OF THE SMALL-POX.

IT is uncertain, at what time the ſmall-pox firſt made its appearance in *Sweden*; but it is very well known, that it firſt came from the *Arabs*, from thence went to the *Ægyptians* in the year 622, or 640, and into *Spain* in the year 714. It was already a diſeaſe generally known in *England*, in the year 1270, or 1280. From *Europe* it was carried over to *America*; from *Denmark* into *Greenland*. This diſeaſe has always been found exceedingly lethiferous in places, where it appeared for the firſt time; and becomes milder after having continued there for ſome time. Nevertheleſs more people are carried off by it, than by the plague.

Ever ſince the introduction of the ſmall-pox into *Europe*, it has always remained there, and ſpread from one place to another. The contagion is more obvious in large towns, as people in greater number, and from many different places, reſort here. Likewiſe in univerſities, as many young people are collected there from various parts. One ſingle perſon may convey the contagion to a place, either by his baggage, or by being infected himſelf. Hence we learn, why the ſmall-pox ſo ſeldom appears in nunneries.

In the month of *February*, in the year 1755, there was not one ſingle perſon in *Upſal* affected with the ſmall-pox. A ſtudent conveyed it there from *Oerebro*, this latter place being infected, conſequently the contagion was conveyed from *Oerebro* to *Upſal*. Another ſtudent was infected, and died; his brother went from *Stockholm* to *Upſal*, in order to take care of the burial, and carried the infection with him, in returning to *Stockholm* again.

In the year 1718, a *Dutch* ſhip went to the *Cape of Good-Hope*: three children who had lately had the ſmall-pox were on board of it. At the arrival of this ſhip, the linen which was uſed during the diſeaſe,

and which had been put by in a cheſt, was ſent aſhore in order to be waſhed. Thoſe employed in waſhing them, became immediately thereby infected, and the contagion ſpread further up in the country, and did not ceaſe until the *Hottentots* threw up a wall, and keeping watch there, prevented all human beings from advancing further inland. This put an effectual ſtop to the diſeaſe.

From this we find the ſmall-pox to be a contagious diſtemper, affecting only thoſe who have not had it before, and in whoſe fluids there is a diſpoſition to receive the infection. Thence we juſtly conclude, that the poiſon of the ſmall-pox is not bred in the air, neither propagated by that element; and that a village or town might be preſerved from the ſmall-pox, if the ſame precautions were taken againſt that diſeaſe, as againſt the plague. Nay, a whole kingdom would always be freed from the ſmall-pox, if all thoſe who have not yet been infected, were inoculated at a time: their clothes which they had uſed during the diſeaſe, ought to be buried in the earth, and the infection ſhould likewiſe be prevented in the ſame manner as in the plague.

It likewiſe appears from this, that when the ſmall-pox is in one or two houſes of a town, there is not any inevitable neceſſity that it ſhould ſpread further; it certainly may be avoided, if ſuch dry nurſes only are choſen, who before have had the diſeaſe; the cloaths of the patient afterwards buried, and the intercourſe between the houſe of the patient and others prevented for ſome time. This at leaſt would preſerve others for a time, till the infection is conveyed there again from other places.

The ſmall-pox is propagated,

1. When a perſon who has not had the diſeaſe, viſits any one who actually is infected, then touches him, or abſorbs the contagion by the breath, or by the pores of the ſkin. I have myſelf ſometimes obſerved, that eruptions ſimilar to the ſmall-pox have broke out on thoſe, who have nurſed patients during that diſeaſe, or have ſat by their bed-ſide for ſeveral days together; but ſuch eruptions were attended with no fever, nor did they leave any marks after them.

A ſimilar and very remarkable inſtance may be read in *Philoſoph. Tranſactions*, No. 373, and another No. 390. Dr. *Kirkpatrick* mentions that he, on ſuch an occaſion, got a puſtule on his upper lip. See his *Analyſis of Inoculation*, edit. ii. p. 21.

2. By handling the clothes of the patient: it is not aſcertained for how long a time the infection will adhere to clothes, and preſerve its activity; but this we know, that it may be preſerved over all the winter, and the next ſpring be fit for inoculation, if during that time it has been ſhut up in a cloſe box. Therefore it ſeems poſſible that a perſon, who has not yet had the ſmall-pox, may be infected by handling linen or clothes, which have been uſed during that diſeaſe, notwithſtanding they may have been put by for ſome time amongſt other clothes.

3. By being bled with the ſame lance that lately has been uſed for a perſon affected with the ſmall-pox. In the year 1741, Mr. *V. G.* was bled, the lips of the wound ſuppurated, and grew ſore, after which he got the ſmall-pox. The ſame happens in an inoculation.

4. By purchaſing; as has been cuſtomary in *Saxony*, in *Eaſt* and *Weſt-Gothland*, and in the principality of *Wales*; in the former places the child is carried to a perſon, who has a benign ſmall-pox, and any one deſires to buy five or ſeven puſtules. The money which has been agreed upon is put, one piece after the other, on a ripe and broken puſtule, in order that ſome of the matter may adhere to each piece; theſe coins are then tied to the legs of the child, and thereby a part of the matter is abſorbed through the pores, and cauſes the ſmall-pox. In the latter place, the ſkin is pierced with a pin, and ſome of the matter is put on the wound. Both theſe methods are in reality a ſort of inoculation.

5. By inoculating as the *Chineſe* do: they promote the infection by dipping a piece of cotton in the ripe puſtule, and afterwards putting it into the noſe.

6. By inoculation in the *Circaſſian* manner: this is a method now very much improved by the Engliſh, and made uſe of, both by them, and many other nations, with great ſucceſs. The excellent reflections by

Mr. *Condamine* on the inoculation of ſmall-pox, tranſlated into *Swediſh* in the year 1754, by the care of his Excellency Count *Scheffer*, Great Counſellor of the kingdom, merit a careful peruſal.

The ſmall-pox is very difficult to know in the beginning. One may aſſert it to be that diſeaſe,

1. If we hear that the ſmall-pox is now rife in the neighbourhood.

2. If we know that the patient has not had it before, and has been lately in the ſame room where a patient lays with the ſmall-pox, or who lately has had it; or if he comes near a perſon who a little before has viſited a patient affected with the ſmall-pox, or touches, or wears ſuch clothes as are infected.

3. If thoſe ſigns appear, which generally precede exanthematic fevers; ſuch as weakneſs, without any apparent cauſe, chillineſs and ſhivering, with a ſucceeding heat, pain in the loins, heavineſs acroſs the breaſt, and an inclination to groan.

4. We are ſtill more convinced that the patient is infected with the ſmall-pox, if his face ſeems to be puffed up, he feels a heavineſs over his eyes, and ſome tears flow, eſpecially from the left eye; but theſe being now leſs hot than in the meaſles: beſides, if he feels a pain in the pit of the ſtomach, when it is preſſed with the hand, has likewiſe a dulneſs, and great propenſity to ſleep, even on unuſual hours, or has ſtartings during his ſleep, and a great inclination to vomit *.

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* The warthy or ſtony, and the chryſtalline or watery ſmall-pox, break out within 24 hours, and diſappear within five, or at moſt ſix days. The eruptions of the former ſort are hard as ſtones, and may leave ſome ſcars after them; the latter reſemble clear water-bladders. Before breaking out, they are attended with anxiety in ſome perſons; but after the eruption, the evil is generally over. A lady 48 years old, became affected with both theſe ſorts at once, accompanied with ſo great an uneaſineſs and anxiety, even after the eruption, that every one preſent took it to be the true ſmall-pox. The report would certainly have ſpread,

The fever continues, but not equally violent, till the breaking out of the puſtules; a little before that, ſome children become convulſive, which is commonly a good ſign *, or ſignifies a benign ſort of ſmall-pox, provided the child is not beſides affected with a difficult dentition. Theſe days conſtitute what is by phyſicians called the firſt *ſtadium*, or *period*, and which contains ſomething more than 72 hours, or takes up a ſmall part of the fourth day.

About the fourth day, the fever begins ſomething to abate, and immediately after the eruption follows. It appears like ſmall red ſpots or pimples, reſembling pin-heads; at firſt they break out in the face, on the upper lip, on the ſides of the noſe, afterwards on the other parts of the face; then they come out on the breaſt, arms and hands, and at laſt on the thighs, legs and feet: but they ſeldom break out on the belly, as the ſkin is there very tough; neither under the feet, as the ſoles of the feet are thick on thoſe who have walked much, and eſpecially without ſhoes. Theſe above-mentioned eruptions increaſe by degrees, grow more elevated and broader, with a white point or ſummit, and their baſis red; the ſpaces between the puſtules turn likewiſe red. The whole body ſeems puffed up, the face begins to ſwell, but chiefly the eye-lids, ſo that they with difficulty can be opened: proportionably as the puſtules increaſe and grow elevated, the fever decreaſes, as does alſo the vomiting; both of them diſappear as ſoon as the eruption is compleated; thoſe days are by phyſicians called the ſecond *ſtadium*, or *period*, and is of forty-eight hours or two days duration.

ſpread, that ſhe was affected with the ſmall-pox for the ſecond time, had not I myſelf, together with ſeveral other phyſicians, ſeen and known the diſeaſe. The ſame is perhaps the caſe with all thoſe, who are ſaid to have had the ſmall-pox twice, or ſeveral times; therefore phyſicians ought not to aſſert any thing, but what they have ſeen themſelves.

* Nevertheleſs we have inſtances of thoſe, who have loſt the uſe of ſpeech, and become paralytic, though they have ſooner or later recovered from this. See *Kirkpatrick*, c. i. p. 84.

The third period takes its beginning when all the puſtules of the face are broke out, and is finiſhed or at an end when they begin to dry. This period commonly continues till the eighth or ninth day, during which time the puſtules begin to ripen and look yellow; that is, they ſuppurate, or are filled with *pus*, grow elevated and broader, their baſes are red and painful; the ſkin or interſtices between the puſtules continue reddiſh, the ſwelling in the face increaſes, ſo that the eye-brows cannot be opened; therefore one is ſaid to be blind till the ſwelling ſubſides again. The eyes can then be opened and ſee as before, which happens on the eleventh day: when the ſwelling of the face abates, it goes into the hands and fingers, and at laſt into the feet. In this *ſtadium* or period, the fever returns again, except it is a very benign ſort of ſmall-pox. This ſecond fever is called the *ſuppurative fever*.

The fourth period begins on the eleventh day, or from the time that the puſtules begin to be incruſted or ſcab, and continues till the ſcabs are fallen off. The puſtules are now drying, ſcaling and falling off in the ſame order as they broke out; during this time, it often happens, that a part of the variolous matter or *pus* has not tranſpired, but is abſorbed into the blood, and cauſes another fever, which phyſicians commonly call *febris ſecunda variolarum*, tho', ſtrictly ſpeaking, it is the third fever of the ſmall-pox; but as it ſometimes begins, when the former one ſcarce has gone off, it is no wonder that they are confounded. The diſeaſe ſometimes is ſo favourable, that neither the firſt or the ſecond fever is obſervable. A true ſmall-pox never is finiſhed under eight days.

This is the run of the diſeaſe *(decurſus morbi)*, when the pocks are benign and regular; but when they are of a malignant kind, they will break out within 72 hours, and not by degrees, but all at once, and in a large quantity; in fine, they likewiſe come out in the noſe, and make a ſtoppage there, as alſo in the throat, and cauſe a great difficulty in ſwallowing. The eruption of the puſtules is not performed in the ſame manner and order, as above was mentioned of the other ſort, but begins as well in

other

other places as in the face; they are of a ſmall ſize in the face, but nevertheleſs they often run into one another, partly in conſequence of their great number, partly by their being ſituated too cloſe to one another in ſeveral places, and therefore broken out in heaps, or in bunches. They do not turn yellow or ripen, and are conſequently not filled with *pus*; therefore they cannot grow elevated and pointed, but are flat and depreſſed in the middle: if we open the one or the other of them on the twelfth day, ſtill only a water is diſcharged; beſides they put on an unuſual colour, as green, violet, or black. The ſkin looks on the eighth or ninth day like parchment; the ſmall-pox is likewiſe of a bad kind, if it is complicated with a difficult hæmorrhage, or petechial ſpots, or with pleuriſy. The fever which otherwiſe ſhould ceaſe when the eruption is performed, continues here ſtill. The other ſuppurative fever does not come on gradually, but all on a ſudden, and with violence. The ſpitting begins already in the ſecond period. The *ſaliva* becomes more and more tenacious, at laſt it is ſuppreſſed, and may ſuffocate the patient. I find that Doctor *Schröder* has made ſome well founded remarks and objections againſt the common method of dividing the ſmall-pox. See *Gott. Gel. Anz.* 1770, p. 1145. They merit a careful peruſal, as does every thing this worthy man has written.

When this diſeaſe begins to ſpread in any place, it is difficult to tell whether it will turn out a ſevere or gentle kind. It is commonly more favourable at the beginning and at the end of the contagion; but this is not a conſtant rule, for the one which began at *Stockholm*, in the year 1751, in the harveſt, and continued till the ſummer in 1752, was in the beginning gentle, but the reſt of the time it remained malignant: if ſome other kind of epidemical diſeaſe infeſts the place at the ſame time, the ſmall-pox will then turn malignant; but when it has continued a long time in any place, it generally changes into a more benign one. The longer this contagion reigned in *Minorca* in the year 1746, the leſs mortal it was; in ſhort, fewer people died of it at the northern part of this iſland, where the diſeaſe made its appearance laſt, than in the ſouthern part, where

it began. When it is a long time paſt ſince the contagion before infeſted the place, it will then act more ſeverely; and therefore being conveyed to this above-mentioned iſland in the year 1742, it was very lethiferous, as it had not appeared there ſince the year 1725. It has been a commonly received opinion, that when the contagion comes into a houſe, thoſe would be the worſt off, who laſt get infected; but I have frequently obſerved the firſt attacked were worſe. Some years ago, ſix children in one family got the ſmall-pox: the firſt, otherwiſe a healthy child, got a very bad and confluent ſort; the other, who had the infection from the former, got it very gentle, &c.

We may judge any particular perſon to get a benign or malign ſort of ſmall-pox, either by what already is ſaid, or from the following circumſtances: a perſon has reaſon to expect a benign ſort, if he is middling fat, has a mild blood, ſoft and white ſkin, florid complexion in the face, a mild and chearful countenance, the eyes being beſides clear, but not fiery. We ſuſpect the patient will have a bad ſort, if he be lean, has a dry thick and hard ſkin, brown or black hair, dark or ſunken eyes, and if his voice is hard and ſonorous.

If one get affected with the ſmall-pox, when the body is well prepared, the ſtomach and bowels being well cleanſed juſt a little before, then one may expect to get through the diſeaſe more eaſily, *et è contra*. It likewiſe is probable to have them gentle if they are caught in the beginning of a ſlight contagion; but after it has continued ſix or ſeven weeks, it may turn out a worſe ſort. One may expect to have a tolerable kind, when the contagion has been malignant in the beginning, and one does not fall in until after it has continued there for ſome time.

Thoſe will get a bad kind of ſmall-pox, who live much on meat, either uſe too nutritious, or too weak a food, or have lived too freely, in reſpect to eating and drinking, and night-watching, or have had too ſtrong exerciſe, or if they previouſly have been enervated by ſome diſeaſe or other. If a woman big with child receive the contagion, ſhe herſelf, or her

fœtus, or both of them, run the riſk of loſing their lives; the ſame is the caſe, if ſhe becomes infected at her lying-in *.

Tho' a child has had much itching or ſcabs, it does not get leſs pocks for all that, but on the contrary has rather more; likewiſe it will be affected with a greater number of them, if a little before, it has had the miliary fever: if a child before this diſeaſe is affected with a quotidian ague, and it gets the ſmall-pox, then the former diſeaſe will generally ceaſe.

Thoſe who have ſoft fibres, have the ſmall-pox more benign than thoſe who have rigid ones; therefore *Engliſhmen*, who bathe much in cold water, have got ſevere pocks, and the *Negroes* ſtill more ſo, as they, beſides bathing, anoint themſelves with balms, roſins, and ſimilar ſubſtances, which obſtruct the pores.

Young people go through this diſeaſe with more facility than old perſons, and the younger they are, the more ſucceſsful generally is the cure. Nevertheleſs we have inſtances of children, who have got a malignant ſort of ſmall-pox, and died, tho' they ſtill were not weaned; but the fault may then lay in the nurſe, or nurſekeeper; for inſtance, how ſhould the child be preſerved, if the nurſe at that time eats much meat, is of a bad temper, or is in love; or if ſhe has her menſes, ſits in a place to ſwaddle the child expoſed to the draught of air, or ſwaddle it ſeldom, and that in linen not warmed, tho' it ſhould have wet itſelf; or if ſhe lies down on the floor, and takes the child by her, &c. If this beſides happens at the time of teething, the child can hardly by any means be recovered; if pocks ſettle in its mouth and throat, or on the lips, it is thereby prevented from ſucking. The moſt favourable age for a patient in the ſmall-pox, is from the fourth year to the fourteenth, and the next favourable one from the 16th to the 25th.

* *Kirkpatrick*, c. i. p. 316. has written down a caſe, which ſeems promiſing to women, that they may happily go through the ſmall-pox, though the eruption ſhould fall in at the ſame time with their menſes.

I have

I have myſelf obſerved fat children to be as often favoured with a mild kind as lean ones.

If the puſtules being licked, have a ſalt taſte, the child that has them, is commonly expected to die, but not elſe. It is likewiſe ſaid, that the diſeaſe will be ſevere, if the hands and feet ſhiver in the firſt *ſtadium*, or period, on their being touched: if thoſe who have fed well, loſe much blood juſt before their falling in, either by wounds or otherwiſe, they will commonly have a favourable ſmall-pox *.

It is no good ſign if a looſeneſs comes on, juſt at the time of eruption, and continues ſtill ſome days during the breaking out of the poſtules. If the pocks itch immediately after their coming out, they will not be mild. When the pain in the loins, and the vomiting is gentle, no very offenſive ſmell comes from the mouth, the noſe not obſtructed, and the throat clean, the ſmall-pox will then be benign, *et è contra.*

Hæmorrhages of the lungs, and of the *anus*, are threatening ſigns; but the blood being voided along with the urine, not one patient among a thouſand will recover. In the ſmall-pox, attended with petechial ſpots, three ſick are ſometimes carried off out of four. A confluent ſmall-pox kills ſometimes every fourth or fifth of thoſe thus affected.

We fear a bad event if the puſtules in the face are flat, and have a depreſſion in the middle, together with a black ſpot, and if their baſis either be dark red or pale, and indolent in the third period; not round and hard to the touch, but ſoft, as alſo to the appearance, as if they were wrinkled or empty. Neither can we hope for any good ſucceſs, if the

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* Dr. *Fuller* relates, that a ſtudent at *Oxford* got the ſmall-pox, attended with an hideous pain in the head and loins, as alſo a *delirium*; but was relieved from all theſe by a violent hæmorrhage. A child ſeven years old, loſt a great deal of blood by its ſtools, a little before the eruption of the puſtules, which turned out a very mild ſort, though the contagion was at that time ſevere. This Mr. *V. Haller* tells in *Opuſc.* prin. iii. p. 352. *Kirkpatrick*, c. i. p. 98.

patient

patient frequently makes water, and but very little at a time: if the urine then looks pale, *delirium* and convulſions are imminent, unleſs the patient has lately been bliſtered with a plaiſter of cantharides.

A diarrhœa in the three firſt periods does no good, but is often of ſervice in the fourth period; but if that which is carried off looks purulent, or is mixed with blood, or is black, the belly being diſtended and ſwelled with ſome pain, then a gangrene has already taken place in the bowels: it is bad if the ſuppurative fever does not come on by degrees, but all at once, and with a hard pulſe, pain in the head and eyes, which are red for want of ſleep *(agrypnia)*, and much uneaſineſs: if we then obſerve a hard pulſation in the arteries on the neck, a *delirium* will follow; but death itſelf is generally the conſequence, when the pulſe at the wriſt of the hand is low at the time the above-mentioned blood veſſels are beating hard.

If not only the whole face, but the eye-brows and the lips ſwell, it is a bad ſign; but the patient will very ſoon die, if the tumour or ſwelling of the face withdraws haſtily, and does not immediately go to the hands; if the ſpitting ceaſes, the ſkin which is between the puſtules and their baſes turns pale, he likewiſe being ſhort of breath, his voice altered, with a peculiar hoarſeneſs, and if he is alſo obſerved to be forgetful.

When he has many puſtules in his throat, what he drinks returns through the noſe. This is the cauſe of children being ſo much againſt drinking during the ſmall-pox, and is in that reſpect chiefly dangerous, as they cannot take the medicines, though in this diſeaſe, unleſs we drink plentifully, death enſues.

A ſevere cold coming on while the diſeaſe is ſtill in its third period, will eaſily ſuppreſs the ſpitting in a ſevere ſmall-pox; many are ſaved by getting large boils, provided they are obſerved and opened in time.

Favourable

Favourable Signs of the Small-pox.	*Unfavourable Signs of the Small-pox.*
1. When one gets the ſmall-pox at the beginning or the end of its contagion.	1. When the contagion of ſmall-pox has already ſpread much.
2. When the contagion is benign.	2. When the contagion is malignant.
3. When it is but lately ſince the contagion of the ſmall-pox appeared before in that place, where one now is affected with it.	3. When the contagion has not appeared there for a long time before.
4. During the ſpring or autumn.	4. During a warm ſummer, or a ſevere winter.
5. When the body is well prepared, and the ſtomach and bowels well cleanſed.	5. When the body is not well prepared, and the ſtomach and bowels not well cleanſed.
6. When we are otherwiſe healthy, and of a ſerene temper, and the body in no way overloaded.	6. When the fluids are in a bad ſtate, one has the milliary fever, ſcab, boils, and worms, or is emaciated by ſome diſeaſe before, as ſorrow, night-watching, much care, or overloaded with ſtrong liquors, and by improper food.
7. When no other epidemical diſeaſe is ſpread in the neighbourhood.	7. When other bad contagious diſtempers infect the place, ſuch as the petechial fever, milliary fever, pleuriſy, and peripneumony.

8. When

Favourable Signs of the Small-pox.	*Unfavourable Signs of the Small-pox.*
8. When one is not too fat, has a ſoft and white ſkin, lively complexion, a mild and chearful look, bright but not fiery eyes.	8. When one is lean, has a rough ſkin, which is thick, hard, or is of a brown complexion, a heavy look, the eyes being dark and deep, down in their *orbita*, the white part of them reddiſh, black hair, harſh voice.
9. Above four years of age, and paſt the age of a tender infant.	9. Not yet four years old.
10. When one is of a family, who commonly have had the ſmall-pox mildly.	10. When one is born of a family, the greater number of who have been affected with a malignant kind.
11. When a woman is not pregnant.	11. When a woman is big with child, or brought to bed.
12. If ſhe has been well the firſt three days.	12. If ſhe has been rather indiſpoſed the uſual time.
13. When one is between the fourth and the fourteenth year of age.	13. When one is in the fourteenth, fifteenth, or the ſixteenth year.
14. A middling quantity of blood, or diſcharge of that which was ſuperfluous, either by hæmorrhage from the noſe or otherwiſe.	14. Blood in too great a quantity, or too rich, or too emaciated.

15. When

Favourable Signs of the Small-pox.	*Unfavourable Signs of the Small-pox.*
15. When one has not been very fond of meat.	15. When one has lived much on animal food.
16. In the beginning of the illneſs has uſed proper remedies, been well taken care of, and drank freely.	16. Neglected, and ill nurſed in the firſt periods of the diſeaſe, and drank but little; for one muſt drink much, or elſe we die of the ſmall-pox.
17. The bed place in a large room, which is moderately warm, and free from any draught of air.	17. Sleeping in a narrow place, where one is expoſed to the draught of air, to a great heat, or to much cold.
18. In the firſt period, the heat, the headach, and thirſt but moderate.	18. When in the firſt period one is affected with much heat, thirſt and profuſe ſweat, likewiſe with ſevere pain in the head and back, alſo a ſhivering in the hands and feet, upon their being touched.
19. In the mentioned period, either has no vomiting at all, or a very gentle one; feels no pain in the *abdomen*, nor too great looſeneſs at the time of eruption.	19. Has a violent vomiting, with a pain in the *abdomen*, and too great a looſeneſs at the breaking out of the puſtules.
20. When the patient is but a little or not at all delirious, has a regular ſleep, and the uneaſineſs is moderate.	20. Has a ſevere *delirium*, which is of long duration; too much ſleep or reſtleſsneſs, much uneaſineſs, frequently changing his poſition in the bed.

21. Slight

Favourable Signs of the Small-pox.

21. Slight ſtartings or convulſions a little before the eruption of the pocks.

22. Moderate bleedings at the noſe.

23. When the ſmall-pox do not break out ſooner than after 72 hours or three days, and then by degrees; firſt in the face, afterwards on the breaſt, arms, hands, legs, feet. Are few in number, eſpecially in the face, ſo that the puſtules are pretty diſtant from each other.

24. When but few puſtules ſit on the noſe, and none in the inſide of it, or in the throat.

25. When the fever goes away after the eruption is performed.

26. They grow elevated and pointed, are round and large, have the uſual colour, white point, red baſis,

Unfavourable Signs of the Small-pox.

21. A ſtinking ſmell from his mouth.

22. Too great a loſs of blood from the lungs, by the ſtools, but chiefly by the urine.

23. When the eruption is performed within 72 hours, ſuddenly without any order, and the puſtules are in great number, eſpecially in the face, ſo that they grow confluent; and that they itch immediately after the eruption.

24. Too great a number both in the inſide and outſide of the noſe, and in the throat, ſo that the patient is obliged to breathe through the mouth, and has a difficulty of ſwallowing.

25. The fever ſtill continues, after the puſtules have broken out.

26. When they are ſmall, oblong, or angulated, or ſtand cloſe upon one another, do not grow ele-

Favourable Signs of the Small pox.	*Unfavourable Signs of the Small-pox.*
baſis, and the ſkin red in the interſtices of each puſtule.	elevated and pointed, but depreſſed in the middle, together with a black ſpot, and the baſis of a dark red or pale, as alſo a pale ſkin in the interſpaces of the pocks, get an unuſual colour, as green, violet, or black.
27. None, or but a ſlight fever in the third period, good reſt and eaſy breathing.	27. A ſuppurative fever, which comes on not by degrees, but on a ſudden, and attended with a headach, reſtleſsneſs, red eyes, continually changing poſition in the bed, a *delirium* and aſthma.
28. If in the third period the puſtules turn yellow and ripen, are diſtended, hard to the touch, and painful, that the body feels ſenſible.	28. If they do not ripen ſoon, and turn yellow, but appear as if they were empty and wrinkled, are ſoft on feeling them, and not painful.
29. And no ſpitting in this period; or in caſe it comes on, it is but thin, eaſy and continued.	29. Strong ſalivation from the beginning of the eruption; that which is hawked up is viſcid, and done with difficulty, or ſometimes ſtopped at once.
30. When the ſwelling of the face is but little, or equally ſpread all over, ſo that even the eye-brows cannot be opened.	30. Many puſtules without ſwelling in the face, or only the eye-lids, and the lips tumid.

31. When

Favourable Signs of the Small-pox.

31. When the ſwelling of the face gives way on the eleventh day, and goes to the arms, hands, and fingers, and at laſt to the legs and feet.

32. Mild weather in the third and fourth period.

33. If the puſtules eaſily dry in the ſame order as they broke out.

34. When one has ſome ſtools during the confluent kind, or in an otherwiſe bad ſmall-pox, likewiſe ſome looſeneſs in the 4th period, and finding relief after each ſtool.

Unfavourable Signs of the Small-pox.

31. Or a large tumour comes on, and ſuddenly ſubſides without immediately taking its way, or going into the arms, hands, and fingers, and at laſt to the legs and feet.

32. Severe cold in the third and fourth period, by which the ſpitting diminiſhes.

33. If they will not dry, or do it but ſlowly, and get new cruſts for the ſecond and third time, ſince the former have fallen off.

34. When one gets no ſtools in the fourth period, or too ſtrong a flux attended with pains, without finding eaſe, ſo that the ſtools look naſty and purulent, and are mixed with blood; the ſtomach is diſtended and tumid, with a ſenſe of pain: for the gangrene is then in the bowels; the patient ſeldom voids his urine, and but little at a time. If the urine is made frequently, but little and of a pale colour, then a *delirium* and convulſions will enſue, unleſs this ariſes from his being

Favourable Signs of the Small-pox.	*Unfavourable Signs of the Small-pox.*
	being bliſtered with cantharides. A *delirium* is imminent when the arteries on the temples and neck are beating quickly: if the pulſe at the joint of the hand is nevertheleſs weak at that time, then death will follow.
35. No boils.	35. Boils in the fourth period, which have been neglected, ſo that they are not ripened and opened.
36. The patient ſwallows eaſily in the fourth period.	36. If he has at this time a difficulty of ſwallowing, a peculiar hoarſneſs, and with a hollow voice.
37. Clean tongue.	37. A black tongue, thruſh, deſire of ſucking of the cloth, which is ſprinkled with wine, or any ſcented water.
38. No pain in the inteſtines.	38. Pains in the bowels.
39. When nature obeys the remedies.	39. When nature does not yield to the remedies, and they have no more effect, the water is voided without the knowledge of the patient, and the ſame is the caſe in reſpect to his ſtools: he gets hiccup, the ſweat comes out in

Favourable Signs of the Small-pox.	*Unfavourable Signs of the Small-pox.*
	drops, which grow violent and cold: then he gets convulſions and at laſt dies.

The Firſt Period.

When any one catches the ſmall pox he ought to begin immediately to take remedies; what is uſed the three firſt days is the moſt neceſſary part of the whole cure; if that be neglected, and the ſmall pox are malignant, the phyſician can in ſuch caſe promiſe no favorable event. No diſeaſe requires ſo much nicety and carefulneſs, as this; a cold breath of wind, a cold napkin, or plate, may cauſe the puſtules to ſubſide or re-enter the body; a cold drink, or ſoured whey, will ſometimes ſuppreſs the ſpitting. If one does not continually prevent the patient from ſcratching himſelf, he may be hurt and deformed for the reſt of his life-time; if one during the time that the pocks are ſcabbing does not continually take notice and care of the patient's eyes, his ſight may be endangered alſo.

The ſmall pox would eaſily be cured, provided we had ſome antidotes againſt the variolous matter, which could ſuffocate or deſtroy the poiſon in its firſt beginning; till any ſuch antidote is diſcovered, or the inoculation of ſmall-pox is univerſally received, we ſhall be obliged to follow the diſeaſe through all its ſtadia or periods; and muſt in each of them endeavour to relieve the patient to the utmoſt of our power. Before I undertake to deſcribe the cure itſelf, it will be neceſſary to mention ſome circumſtances, on which the happy event of the diſeaſe may in a great meaſure depend.

1. As to the room in which the patient lies, it would be beſt to have it large, middlingly light, neither too warm nor too cold, but free from any draught of air. If the patient has a ſevere fever, the room ought to be kept cooler; and if the fever be too ſlight, the

room ſhould be ſomething warmer. The temperature is generally as it ought to be when the *Swediſh* thermometer ſtands 13 or 14 degrees above the freezing point *, or when one ſcarce feels any chillineſs in the fingers on ſhaking the hand haſtily backwards and forwards. It is likewiſe of ſervice to hang a curtain before the door; partly to prevent the draught of air, and partly that one may let in freſh air: without this a draught of wind will incommode the patient. One ought alſo frequently to ſtrew young and freſh branches of *Scotch* fir-tree in the room, and which antecedently have been chopped and ſprinkled with ſome ſmall beer or vinegar, or with a little rheniſh wine, in caſe the patient is weak. The ſick will ſuffer in his eyes if the room ſmoaks, but he will find immediate relief by ſome vinegar evaporated over the fire. We ought not to place more than one or at the utmoſt two patients in the ſame room, unleſs we cannot poſſibly avoid it. We know what a ſtench ariſes from a ſingle patient, eſpecially on the 8th or 9th day, and that, from ſeveral patients in the ſame room, the air grows infected to ſuch a degree that even the healthy ſuffer by it, and the ſick ſtill more ſo. In that caſe, it is not ſufficient to uſe the *fir* or *ſpruce*, as above was ſaid, but one ought even then frequently to put ſome vinegar over a fire-pan in order to evaporate in the room. The bed ought to be ſo placed that one can get to the patient on both ſides. It ſhould eſpecially not be put near a ſtone-wall; for it is obſerved that the pocks ripen and dry much better on that ſide, than on that which is towards the room itſelf. Nor ought the bed to ſtand ſo that the light falls in the eyes of the patient; he may lay on his uſual bed cloaths, but a matraſs is in general the beſt. He ſhould uſe a thinner covering if it be in the ſummer, and a thicker one if it be in winter; his feet ought to be kept ſomething warmer than the other

* The *Swediſh* thermometer is filled with quickſilver, and the diſtance betwixt the boiling and freezing points is divided into 100 equal parts or degrees, which one muſt begin to count from the freezing point, both ways, upwards and downwards.

parts

parts of his body. We ſhould by all means ſhift the ſick with clean linen, eſpecially in the fourth ſtadium, provided it is carefully and cautiouſly done. There is no neceſſity for any perſons wearing it before, it will be quite ſufficient to have it well dried by a ſmoothing iron; or if his linen happens to adhere to any of the puſtules during the diſeaſe, we eaſily looſen it by applying to that place a ſpunge which has been dipped in warm milk.

Nobody ought to be admitted into the patient's chamber who is not wanted to the nurſe-keeping, and the leſs we talk with him the better it is. As for the food, we obſerve in general, that a ſick perſon ought to eat but a little at a time, and never to take any ſolid food at thoſe hours of the day when the fever is ſevereſt. He does not want much nouriſhment in the favourable kind of ſmall-pox, becauſe the illneſs will be ſhort. But in the ſeverer ſort he has occaſion for more, as the diſeaſe will be of long duration; all ſorts of water-gruels and groats are convenient, as alſo a cherry-ſoup. Thoſe who have a thin blood and little fever, may eat veal and chicken-broths boiled with greens, and afterwards ſtrained: or panadas prepared for inſtance as follows. Take two ounces of biſcuit, boil them in a pint and a half of water till they are well diſſolved, then add two or three ſpoonfuls of wine, and two drachms of ſugar, beating it together with the yolk of an egg on taking the pan from the fire. Thoſe on whom the puſtules will not riſe and fill well, may be allowed ſome wine in their ſoups, or they may eat a ſlice of toaſted bread ſoaked in water, ſtrewed with ſome ſugar, and ſprinkled with a little rheniſh wine. If the patient has too great a looſeneſs, give him this toaſt ſtrewed with the yellow part of orange peel, a little nutmeg and cinnamon. When the fever is too ſtrong, we pour into his ſoup a little vinegar, or inſtead of that, ſome juice of Berbery *(ſuccus berberum)* in caſe he has too great a looſeneſs at that time. The fever is in general too high with us in Sweden during the diſeaſe, and therefore it is not adviſeable to give the patients either broths, eggs, or wine.

It is indiſpenſably neceſſary to drink plentifully during the ſmall-pox, and chiefly in the firſt period. The

patient ought to drink frequently, and but little at a time. The nurſe or waiter is not to ſtand till the ſick aſks him for the drink; for he will not feel any thirſt if he ſhould be a little delirious. He does not chuſe to drink if he has *puſtules* in the throat, becauſe it cauſes pains in ſwallowing; nor need we aſk the patient if he chuſes to drink, but we ought to carry the tea-cup or glaſs to his mouth as often as we judge it neceſſary, during the time he is awake; a barley-water (*aqua hordeata,*) mixed with a fourth part of milk, is a very ſalutary drink in the ſmall-pox. Whey mixed with an equal portion of boiled water is very palatable, and quenches the thirſt: freſh and ſtrained butter-milk is likewiſe very good; alſo tea with a little milk in it, or tea with citron marmalade. One may likewiſe prepare a very palatable and refreſhing drink of preſerved red currants, on pouring on them boiling hot water, and after it is a little cooled we may add a little rheniſh wine to it. Preſerved Norlandic berries, in the ſame manner prepared, give alſo a very pleaſant drink, which eſpecially is applicable on the 4th, 5th and 6th day. Barley ptiſans, in which has been diſſolved ſome gelly, will make a cooling drink likewiſe; as alſo panada with the juice of limes and old hock; but nothing is ſo refreſhing, and quenches the thirſt ſooner, than a well prepared drink of cranberries, which therefore ought to be had in the ſhops.

The five firſt ſorts of theſe drinks are chiefly the moſt uſeful in the ſmall-pox, eſpecially when the fever is too ſtrong, and ought to be lowered; the latter are the moſt ſerviceable when the fever ought to be ſupported or increaſed, therefore it ſhould be modified accordingly with wine. Thoſe who are affected with puſtules in the throat cannot bear any acidulated food or drink, much leſs any thing ſour; the throat grows thereby worſe and hoarſer.

As for the cure itſelf in the firſt period, we muſt endeavour to effect it, 1. By taking care that the fever be moderate. 2. That the ſmall-pox do not break out till towards or on the fourth day. 3. That as few puſtules as poſſible may break out in the face, noſe and throat, and none in the eyes. 4. To prevent dangerous accidents,

If the fever be too ſtrong we abate it: 1. By bleeding, which ought to be performed, *a.*) If the patient has too much blood; if we know him to be plethoric; if he has for a long time had a good appetite, together with a ſound ſleep and little exerciſe; if he has uſed nouriſhing food, beer and wine; if he has not been weakened by any evacuation; if his pulſe is high and ſtrong, the veins diſtended, and the face red, but eſpecially the lips, gums, the inſide of the noſe, eyelids, the corners and the whites of the eye: *b.*) If the patient be young, of a ſtrong complexion, and has been uſed to have inflammatory fevers: *c.*) If at this time many in the neighbourhood are affected with inflammatory fevers, or ſuch in which bleeding has been found beneficial: *d.)* If ſevere cold or dryneſs, or north wind has been prevalent: *e.*) If the fever is very violent, attended with head-ach, pain in the loins and the whole body, an anxiety, ſigns of imminent delirium, ſwelling in the throat or ſome inflammation. The fever is violent if the pulſe be quick, hard and ſtrong; if a ſtrong pulſation is felt on the temples, the patient being very hot, and unwilling to lie down; if the breath be ſhort and laborious, the urine red, the tongue dry, with a great thirſt*. The ſigns of an imminent delirium are a ſtrong throbbing of the arteries on the temples, a ſevere head-ach, reſtleſſneſs, and the white of the eyes turned red and inflamed. When the patient is found under ſuch circumſtances, he ought without heſitation to be bled: and that not once but ſeveral times till the fever is abated to a moderate

* Nevertheleſs the bleeding ought not to be immoderate, in order that the ſame thing may not ariſe from thence, as happened to the *Italian* phyſicians, who on inoculating a child 11 years of age, drew off ſo much blood during the preparation, as alſo after the fever came on, that the fever abated, and only a ſingle puſtule broke out in the child's face: but as ſoon as the child had recovered a little ſtrength after this waſting of blood, the variolous fever returned, and a great number of pocks broke out; the cure proved however ſucceſsful. See *Abhandl. de Naturforſch. Geſelſch* in *Zurich*, Vol. III. *p.* 175.

or due height. If he is too averſe to bleeding, or is too fat, ſo that it cannot be performed without difficulty, we may then apply the cupping glaſs in the nape of the neck, and on the calf of the leg, and thereby nearly gain the ſame point, and beſides that, a great number of puſtules are by that means derived from the face and throat. We ought not to bleed a patient who labours under contrary circumſtances; therefore no blood ought to be drawn from one that has had a weak and pale countenance, or has a weak and low pulſe, and the urine colourleſs, the thirſt and pains but little, and the drouſineſs great; or if he is affected with pains in the ſtomach, faintings, and a dejected mind. The ſmall-pox that ſuch a perſon gets, will neither riſe nor ripen, therefore he has rather occaſion for things that will raiſe his pulſe and increaſe the fever, than ſuch as make them ſink lower.

Children are commonly weak and ſooner loſe their ſtrength; grow alſo in proportion a great deal; conſequently a great part of their food is employed to the increaſe of their body. For that reaſon I would rather not recommend any bleeding for them, unleſs there be the more obvious neceſſity for it, and that we apprehend convulſions; eſpecially as nature of her own accord cauſes commonly a bleeding at the noſe.

2. With remedies which well cleanſe the ſtomach and bowels *. As ſoon as the bleeding is performed, a clyſter ought to be injected; that may be prepared of tepid water, a little oil of olives, honey and ſaltpetre. Such an injection ſhould be repeated every day, till near the time we ſuppoſe the puſtules will break out, unleſs on a day we have thought proper to order a purge. That is generally neceſſary, chiefly in caſe the patient before has had a good appetite, uſed to good chear, and but little evacuation. Chiefly if the ſtomach at the ſame time be full and diſtended, rumbling wind felt in the belly, and the pains in the loins are violent †: a proper purge for a child is the rhubarb elixir

* See *V. Haller's Elem. Phyſiol.* vii. *p.* 179.

† That a concurring diarrhœa can retard the eruption of the ſmall-pox, may be ſeen from an inſtance related in the above-

elixir prepared with wine (*Tinctura Rhei dulcis Edinb.* or *elixir ſalutis Edinb.*) made with wine. The doſe is nearly a ſpoonful for a child three years of age; or we may take half a drachm of rhubarb cut in fine pieces, a few grains of cochineal, and four raiſins likewiſe cut; on this we pour three tea-cups full of boiling water in a tea-pot, which is to be put on hot aſhes during the night, filtered and mixed with a tea-ſpoonful of cinnamon water, of this the child muſt drink two tea-cups full immediately, and the remainder an hour after. But theſe purges are too ſlow in their operation; and it is of the greateſt importance to abate the fever to a moderate and gentle degree in the firſt period; for ſcarce one patient dies, of thoſe who then have the fever moderate. The above remedies I have propoſed are good, but not always ſufficient, eſpecially if the contagion of the ſmall-pox is connected with a putrid fever. Nothing moderates the violence of the fever ſo effectually as purges, which operate quickly and freely, and are given before the eruption. The *Engliſh* have firſt taught us this, and our own experience has confirmed their aſſertion. When ſuch a remedy has quickly made its operation, and with an evacuation to ſome purpoſe, we have found that head-ach, delirium, ſwelled and red face, ſleepineſs or drouſineſs nearly reſembling lethargy, and all bad ſymptoms at once have been carried away; and that in the ſmall-pox both from natural infection and by the inciſion. If the fever has not abated ſufficiently after the firſt doſe, we have given another if the time allowed it. Some of my friends among the phyſicians in *Stockholm*, have alſo by letters to me confirmed the ſame: the purge they had preſcribed, was commonly a powder prepared of *cremor tartari* three drachms, root of jalap half a drachm, and *tartarus emeticus* one, or one and a half,

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above-mentioned Tranſactions of *Zurich*, Vol. III. *p.* 174. When the diarrhœa had ceaſed, and the child recovered ſtrength again, the variolous fever returned, the puſtules broke out, and the event was proſperous. This happened by an inoculation, and may likewiſe happen by a natural infection.

or two grains, according to the age of the child, and other circumſtances. This they divided into ſix parts, and gave one part every hour till it began to operate; profeſſor *Bergius* ordered, with the ſame ſucceſs, a powder made of *tartarus emeticus* three grains, and *cremor tartari* three drachms, well rubbed together, and divided in eight parts, to be taken as the former. We have learned from the *French* phyſicians, that *tartarus emeticus* does not occaſion a vomiting, but purges if we mix it with ſome ſalt, and rub it very fine. Emetics are ſeldom wanted in the ſmall-pox *, for the ſick puke enough without them. And in order to facilitate the vomiting, we give them to drink ſome warm water after each reaching, till it is at laſt thrown up again untinged, and we may then with reaſon think the ſtomach cleanſed.

3. With cooling food and drink, and ſuch as above was mentioned. 4. With cooling remedies. For inſtance, we may prepare ſmall powders of ſix grains of purified nitre, and 30 grains of *morſulæ citri*, and give one of them every hour, or hour and a half; or *cremor tartari* 10 grains, mixed with an equal portion of ſugar. If the child has rather a looſeneſs, we muſt order purified *ſal ammoniacum* inſtead of nitre, but the powder ſhould then be taken in wafers, in order to avoid the taſte. One ought to be cautious in regard to the nitrous medicines, and not to uſe them too freely, eſpecially with weak and ſenſible children, who will be injured by them in their ſtomach. In caſe we ſhould prefer a draught, it may be prepared, for inſtance, of two quarts of boiled water, which afterwards has been cooled, mixing with it three ounces of good vinegar, three ounces of ſyrup of raſberries, and as much

* They are however required, when nature of her own accord does not excite vomiting, although the child ſhould be troubled with ſlime: if it has a ſnoring in the breaſt, has a pale and ſunken countenance, and is ſubject to convulſions, alſo when the ſpots of the ſmall-pox cannot break out and riſe in conſequence of this weakneſs and dullneſs, but ſeem as if they were confined under the ſkin, and the child lies as in a lethargy.

of pearl-barley ſoup; this we give to drink freely and frequently, a tea-cup full at a time.

5. By leſs heat in the room. 6. By giving him a thinner covering: and 7. By often changing his bed, ſo that the patient is carried from one bed to another, and does not return to his former one before the bed cloaths have had time to cool. 8. By prevailing on him to get out of his bed as much as poſſible, which will prove very ſalutary to him.

If the fever ſhould be too ſlight, which is however ſeldom the caſe during this period, bleeding ought then to be omitted, but ſtools muſt be procured for all that, as is above obſerved. We increaſe the fever; 1. By heating the chamber more. 2. By a thicker and warmer covering. 3. By food and drink, with a little wine to it; a whey of wine will be very much to the purpoſe in this caſe. 4. By a paſte or poultice made of acrid muſtard-ſeeds with vinegar, and applied to the ſoles of the feet, or on each calf of the leg; this muſt be removed as ſoon as the ſkin grows red and ſpotted.

We have no method, with any ſafety, to prevent the breaking out of the puſtules till on the fourth day, but in abſtaining from the uſe of expellent remedies on the firſt three days; for inſtance, as muſk, camphire, flowers of ſulphur, &c. and taking care that the room be kept rather cool. We likewiſe prevail on the patient to keep out of bed, or at leaſt not to lie under the cloaths.

We endeavour to ſecure the face, eyes, noſe and throat from being overrun with pocks; 1. By bleeding or applying leeches, when circumſtances will allow the uſe of theſe remedies, as has been above obſerved. 2. By ſcratching the ſkin in ſeveral places without piercing it; this may be effected on the arms and legs with a pin or the point of a lancet; ſee more of this in the next Chapter on Inoculation. When the extremities and the ſurface of the body are in this manner irritated, the blood will flow in a greater quantity to thoſe parts: and the greater number of puſtules and ſuppuration we are able to raiſe on the arms and legs, the more are the face, eyes, noſe and neck ſecured, by means of the revulſion they cauſe; therefore it will anſwer the ſame purpoſe, 3. to apply

ſinapiſms

ſinapiſms on the ſoles of the feet, or on the calf of the legs, or on the arms; this will be proved by the inſtance I am going to give in the Chapter of Inoculation. 4. With the ſame intention we foment the laſt mentioned places with flannels or linen ſoaked in a warm decoction of carrots and milk, afterwards ſqueezed and applied, taking care to change them as often as they begin to cool. We find how ſeldom the pocks break out on the ſoles of the feet and on the belly, becauſe the ſkin in the firſt place is generally hard, and in the latter very rough. For the ſame reaſon we, 5. ought to keep the under parts of the body warmer than the upper; and 6. we ſhould ſhave the head, by which means it is kept cooler and perſpires better. We may as well do this at firſt, as the hair otherwiſe ſticks faſt together with the puſtules, ſo that it will be neceſſary to cut it off ſooner or later.

We endeavour beſides to guard the eyes, by means of a linen compreſs, on which ſome camphire has been rubbed, faſtening it to the night cap, ſo that it hangs looſely over and covers the eyes.

As the ſcars do not occaſion any deformity of the face, provided the noſe is not hurt, therefore one of our principal endeavours ſhould be to preſerve that part. In order to effect this, apply on it ſmall linen rags ſoaked with a little camphire ſpirit, or *balſamum embryonum*; but one muſt however allow the ſtrongeſt part of this firſt to perſpire away; *emplaſtrum de ranis-cum mercurio* will anſwer the ſame purpoſe, if it is thinly ſpread on a piece of linen, and applied to the noſe *. In caſe a number of puſtules have broken out in the noſtrils, and cauſe the patient to breathe through the open mouth, it is of ſervice to put ſmall linen rolls in the noſe that have been ſoaked in milk, taking care that the broader end of them are always dry.

It is a vulgar cuſtom with us to ſtitch black wool to a bandage, and beſmearing it with *theriaca*, tie it

* I find that Dr. *Sulzer* has been pleaſed to follow this my advice; and that it has proved ſucceſsful. So that the child got no puſtules on the noſe. See the Tranſact. of *Zurich*, vol. III. *p.* 53.

round

round the neck in order to prevent the puſtules ſettling in the throat. This ſeems to do neither good nor harm; it will be more beneficial to apply leeches to the nape of the neck of the patient, and perſuade him to gargle himſelf freely and frequently with a water prepared as follows; take a drachm of camphire, pour on it a few drops of *(liquor anodynus mineralis Hoffmanni)* Dr. *Hoffman*'s mineral anodine drops, and rub it in a marble mortar; add to this four drachms of ſugar, and rub it again, ſo that all be well mixed; pour gradually on this two pints of hot water, and ſtrain it directly. This to be preſerved in a bottle well corked: one may uſe of this half a tea-cup full at a time; at each time we add to it a few drops of the above-mentioned *liquor anod. min.* In caſe the puſtules are already broke out in the throat, our province muſt then be to bring them ſoon to maturity and deſquamation, which can beſt be obtained by a frequent gargling with warm milk or thin oat-gruel ſoup.

The troubleſome accidents or ſymptoms which uſually attend in the firſt period, are vomiting, delirium, looſeneſs, hæmorrhage of the noſe, and convulſions. As the vomiting cleanſes the ſtomach, it ſhould be promoted with milk-warm water; if it is too violent we muſt apply to the ſtomach bags with mint, *(mentha criſpa)* with ſome ſaffron put to it, or we boil theſe bags in rheniſh wine, and ſqueezing them well out, apply them moderatly heated to the ſtomach; or we may boil a poultice of leavened bread and mint, together with vinegar or rheniſh wine, and putting it into a linen bag, apply it to the ſtomach; the vomiting ceaſes of its own accord as ſoon the eruption is quite compleat. A delirium is not dangerous in the firſt period, as it is owing only to a rapid circulation of the blood; we oppoſe to it the ſame remedies by which the fever was to be moderated. A cliſter injected, and leeches applied in the nape of the neck, often prove ſufficient. In children it generally ceaſes by a bleeding of the noſe, which commonly is portended by an itching or tickling of the noſe, or by an excruciating or ſhooting pain in either of the ſides, which comes and goes off haſtily.

Too great a looſeneſs may be prevented, by giving rhubarb in the very beginning of the diſeaſe, in the

manner as above was obſerved. A diarrhœa is not hurtful the firſt days; but it ought to be ſtopped in caſe it ſhould continue till the time of eruption; we may ſtop it by a convenient diet, and an *emulſio arabica* prepared of three drachms of *gummi arabicum* boiled in two pints of water, and afterwards mixed with an ounce of ſweet almonds blanched and pounded; likewiſe by a clyſter prepared of milk, a little *theriaca* and white ſtarch; or of lime water, a little *diaſcordium* and *balſamus Locatelli* beaten together with the yolk of an egg. Tender infants are affected with ſome looſeneſs during the whole courſe of the ſeverer kind of ſmall-pox, and this looſeneſs proves generally to their advantage.

The ſame is the caſe with the bleeding of the noſe, when it is moderate*: head-ach and delirium are thereby relieved, and the fever itſelf diminiſhed. The patient ought to bleed but in a tea-cup, plate, or veſſel, in order that one may judge of the quantity, whether it be moderate or not; if it ſhould be too copious, which we likewiſe judge from a greater lowering or ſinking of the pulſe, we ſtop it by *fungus* cut in form of a long cone, and put in the noſe: or we beat the white of an egg and alum together, ſpread it on a tent, and putting it up into the noſe, leave it there till it falls out of its own accord.

Convulſions commonly portend a favourable ſmall-pox; when they come on, it happens either on the firſt night of the fever, or more commonly a little before the eruption; we prevent them by bleeding, but may relieve them by a clyſter of milk, oil, and ſugar; and by giving the child as ſoon as it is able to ſwallow, a powder of two or three grains of muſk previouſly rubbed with 10 or 12 grains of ſugar: a gentle vomit will have a more certain effect on this occaſion†.

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* See *V. Haller's Elem. Phyſiol.* V. *p.* 150.

† A child eight months of age was inoculated in the year 1770, in the ſpring, and got convulſions; had a hollow ſnoring in the breaſt, its hue was pale, the body cooliſh, and its pulſe quick. The child could not recover its natural warmth

The Second Period.

During theſe days, our efforts ſhould be to promote a good eruption of the puſtules, that they riſe full, and become pointed; there is however no occaſion for any expellent remedies, if we find that the puſtules break out gradually, grow elevated and broader, that the pulſe is moderately high and ſtrong, and not too quick, but beats for inſtance ſomething more than 120 ſtrokes in a minute in a child, and about 96 ſtrokes in a full grown perſon; all that is then requiſite for the patient, is to let him drink freely, in order that his blood may be ſupplied with a ſufficiency to fill the puſtules.

But in caſe the puſtules will not break out freely, and ſtill leſs riſe and fill, the vomiting continues, the pulſe is low, weak, and quick at the ſame time; then we ought to give our patient one or two ſpoonfuls of wine or mead, or we let him drink a whey of wine. Now it is likewiſe proper to give him ſmall powders prepared of a few grains of camphire, one grain of extract of ſaffron, and 30 grains of preſerved citron peel (*morſulæ citri*): or a camphire emulſion made of half a drachm of camphire, rubbed with ſix almonds blanched and pounded, and then mixed with half a pint of *aqua florum ulmariæ*, and two drachms of ſugar; a tea-cup full of this is the doſe at a time; or we may preſcribe powders of muſk and ſugar as above-mentioned, ordering ſome tea of ulmaria (*flores ulmariæ*) to be drank after it; but, as we have obſerved, this is ſeldom wanted. When I have been aſſured of the child's being well and properly nurſed, the ſteam of warm milk has been directed to the face; by which means I have found the puſtules begin to riſe immediately: I have

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warmth or uſual colour in the face, before it got a few pukings by *ipecacuanha*, mixed with *oxymel ſcilliticum*; this at firſt evacuated a quantity of ſlime, and, afterwards purged gently. Perhaps the *tartarus emeticus* would be more proper on ſuch occaſions, as it afterwards gives the humors a greater tendency towards the ſkin, than the *ipecacuanha*.

ſome-

ſometimes applied ſinapiſms to the calfs of the legs with great advantage.

All this ſucceeds ſometimes exceedingly well; the puſtules break out, and they riſe likewiſe; but it often happens that they of a ſudden ſubſide again; turning either pale, or containing a matter which does not grow yellow or ripen, but turns black and ſtinking, ſurrounded with petechial ſpots; therefore as ſoon as I find that the puſtules are backward and ſlow in their breaking out and riſing during this period, I immediately begin to give the jeſuits bark, eſpecially if I know that the preſent contagion of the ſmall-pox has been malignant, and that the patient is of a weak conſtitution; and I continue this remedy during the whole courſe of the diſeaſe, giving it oftener, or in greater doſes, when the pulſe is weak, and the red colour round the puſtules is leſs; but in caſe the pulſe is quick, and the above-mentioned redneſs greater, the doſes of the bark are leſſened accordingly, or given at longer intervals. This method has been followed by many *Swediſh* phyſicians, and attended with great ſucceſs; and has been before us uſed by the *Engliſh* phyſicians, *Morton*, *Mead*, *Monro*, *Wall*, *Huxham* and others: nevertheleſs, it is a difficult taſk to make the bark palatable, ſo that children can take it. How to gain this point, ſhall be afterwards ſhewn in the Chapter on the Ague; it would be very eaſy to mix wet bark up in wafers, provided children could ſwallow ſuch lumps; the taſte of bark will likewiſe be made tolerable, by beating it with bitter almonds; powder of bark may alſo be tolerably well ſwallowed in the common almond milk; the bark mixed with the *bacc. Norlandic.* and ſyrup of the ſame may be made into a palatable electuary, which even for the ſake of the Norlandic berries alone, is now very proper and ſalutary. The following compoſition is alſo very good: take the confection of the lemon peel one ounce and a half, and an equal portion of orange peels; beat them well together in a mortar, adding gradually during the time *aqua ulmariæ* half a pint, and *aqua aurantiorum* a gill; this is to be ſtrained and mixed with three drachms of powdered bark, and *ſyrupus aurantiorum* or *ſyrupus baccarum Norlandit.* about two ounces; or we

may

may make a tolerably palatable drink of two drachms of extract of bark, diſſolved in 10 ounces of *aqua ceraſorum*, adding to this three ounces of *ſyrupus citri e toto*; the doſe is a ſpoonful at a time.

As the bark is a very ſalutary and bleſſed remedy, it is of importance always to try before hand, whether it be genuine or adulterated. This may be done in the following manner: boil a little powder of bark in water, and pour it directly into a glaſs bottle; if the decoction appear of a red colour while it is ſtill warm, and pale after it has cooled, one may depend on its goodneſs, otherwiſe not.

It happens likewiſe frequently that the pocks cannot break out, on account of the fever's being too violent and ſevere. Thoſe who are of a ſtrong conſtitution, have firm fibres, and thick blood, the *cruor* in it being prevalent, are ſubject to this difficulty; we ought then to uſe thoſe remedies which diminiſh the fever, and which are the ſame as above enumerated at No. 1, 2, 3, 4, &c. at the ſame time ſoftening the ſkin on the arms, hands, feet, and legs with fomentations, as alſo has been mentioned before; powders of camphire may be likewiſe now made uſe of, but prepared of ſeven grains of nitre, three grains of camphire, and 30 grains of *morſulæ citri*. If the pain in the loins ſtill continues and is violent, that may alſo retard the eruption; therefore in that caſe, one muſt apply a warm poultice of groats wrapt up in cloths, on the back of the patient, and give him either the *ſyrupus e meconio Edinburg.* or the *Elixir paregor. Lond.* and at the ſame time, one of the above remedies which will promote the eruption; the doſe of the elixir for a child, is from five to 20 drops in ſome ſyrup, with which it ought to be well mixed.

Should the patient be delirious, although the eruption is tolerably well compleated, we ought immediately to apply the *ſinapiſms* on the feet, and leeches to the nape of the neck. We find that the lungs are juſt beginning to inflame, when the patient complains of a load on his breaſt, hawks up blood, the fever continues, the breathing grows difficult, and is found to be hot when one holds the hand before his noſe and

mouth; in that caſe he ought immediately to be bled. See more of this in the Chapter on Meaſles.

In caſe the ſick is affected with a pleuriſy, we employ the ſame remedies, and the ſide muſt be fomented with *oleum camphoratum Edinb.* A pain in the ſide, which comes on, and goes off of a ſudden, commonly announces an impendent bleeding of the noſe. If too great a looſeneſs, or a true dyſentery ſhould concur in this period, we muſt immediately employ the remedies, as above recommended for the looſeneſs, and at the ſame time uſe the powders of camphire, prepared without nitre, but mixed with the eighth or fourth part of a grain of *opium*, according to the age of the patient.

The Third Period.

In this period the puſtules begin to ſtink, itch, and ripen *. What was obſerved at the beginning of the ſecond period, likewiſe holds good here: if nature herſelf is ſufficient, ſhe will want no other aſſiſtance than plentiful drinking; but if the pulſe be too weak, or too ſtrong, we may uſe the remedies above recommended, for either raiſing or lowering it. No ſuppurative fever will enſue when the ſmall-pox is very favourable; but if the diſeaſe be ſevere, the ſick will towards night grow affected with an uneaſineſs, and become reſtleſs, ſo that they lie toſſing themſelves from one ſide of the bed to the other. In ſuch a caſe it is cuſtomary to give a child a little of the *ſyrupus e Meconio*; but it is more adviſeable to leave that alone, and rather give it ſome of the drink, as mentioned at No. 4. or according to the advice of the worthy Dr. *Tiſſot*, (in his *Letters to Baron* Van Haller), let the child take the following mixture:

℞. *Spir. Vitrioli*, ʒ ß.
Syrupus Violar. ʒiij.
M. Dr. S. Cooling mixture.

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* That the *pus* can burn, is an obſervation made by *V. Haller*, *Opuſc. min.* iii. p. 356.

The

The doſe is ten drops at a time, taken in a tea-cupful of pearl-barley water, and repeated more or leſs frequently in a day. Now in order to prevent the patient from ſcratching himſelf, it is neceſſary to tie his hands, and to have a perſon attending at his bed, ſtreaking over the puſtules in his face with a quill continually and gently.

If the ſmall-pox be malignant, then the ſuppurative fever *(febris ſuppuratoria variolarum)* will begin with a quick pulſe, heat, thirſt, uneaſineſs, and want of ſleep *. Sometimes it comes on ſuddenly, and with ſuch a violence, that before we know any thing about the matter, we find the patient in a ſevere *delirium*, with a ſwelled throat, or an inflammation in the breaſt, or pleuriſy. The following are the cauſes of this fever.

1. The nerves of the ſkin are irritated partly by means of the ſwelling in the face and whole body, which cauſes a tenſion in the ſkin, and partly by the formation of the *pus* in the puſtules and their diſtention.

2. The natural and uſual perſpiration is intercepted by the ſkin being overrun with puſtules. Suppoſe only one third of the ſkin to be overrun and crowded with puſtules; nevertheleſs nine ounces of perſpirable matter will by that means be retained at leaſt for each day, which will always occaſion a fever by its acrimony, unleſs it is carried off ſome other ways.

Sometimes it will likewiſe happen, that the puſtules ſubſide; and that a great part of the *pus* is abſorbed into the blood, which increaſes the fever a great deal; but, as that belongs chiefly to the fourth period, it ſhall be mentioned there.

This fever will prove more ſevere and dangerous, in proportion as the conſtitution of the ſick is more ſenſible; and the number of the puſtules greater, and malignant, and the blood has been leſs diluted in the

* Thoſe who have a nice, or ſubtil ſmell, are able thereby to know, whether this fever will break out the next day.

firſt periods with a proper and ſufficient drink; accordingly, it will be of the greateſt importance to prevent it, and to procure the patient a good nurſe. The firſt cauſe of this fever may be diminiſhed, or entirely removed, by copious drinking, and by fomenting the extremities, as I have before preſcribed: if the puſtules are very painful, we may then give the child a little *ſyrupus è Meconio.*

The ſecond cauſe of this fever, we endeavour likewiſe to remove, partly by copious drinking, for the acrimony is blunted by being diluted; partly by procuring it another outlet; for inſtance, through thoſe pores of the ſkin, where there are no puſtules, and by taking powders of camphire. I have many times obſerved the ſick brought into a ſweat at thoſe places *; and likewiſe to have had ſome reſt and ſleep after each powder, during which time the puſtules have riſen, and conſequently been more filled with a part of this matter; therefore it is very beneficial, to open at leaſt the largeſt and moſt coherent puſtules, by means of a pin, lancet, or the ſciſſars, in order to diſcharge a great part of the corroſive *variolous* matter; but this muſt be repeated ſeveral times in a day, as they ſoon grow together again. The matter which runs out at each opening, ought to be wiped off by a fine ſponge, dipped in milk-warm water. The perſpirable matter may get another iſſue by a more copious ſalivation, of which we ſhall afterwards learn, how it may be promoted; alſo by a more copious diſcharge of urine, which we may encourage by drinking freely, eſpecially if ſmall doſes of *ſpiritus Mindereri* are put into the drink, or we take half a drachm, or a drachm of this ſpirit in *oxymel ſcilliticum*, or by the powders of *cremor Tartari*, as before-mentioned. Sometimes this perſpirable matter goes off by frequent ſtools, that often to the advantage of the patient, and which gave occaſion to the learned Dr. *Friend* to preſcribe purges. They ought

* *B. V. Haller* is perhaps the firſt, who brought camphire into uſe in this diſeaſe. With how great ſucceſs he employed this remedy during a malignant contagion, may be read in his *Op. min.* iii. p. 350.

to

to be given as ſoon as the greater part of the puſtules in the face have begun to dry. We have no other reſource than that, in caſe the ſalivation ceaſes, the ſwelling in the face diſappears, without being transferred to the hands and fingers, and the diſcharge of urine decreaſes. It is however ſafeſt, firſt, to inject a clyſter, (which ought to be done every day, during the whole courſe of the diſeaſe, in caſe nature of her own accord does not procure ſtools), and after that has operated, we muſt attentively obſerve, whether a low, quick and trembling pulſe riſes, and is filled: if the uneaſineſs and the heat decreaſes, the ſhort and difficult breathing leſſens, we may then, in ſuch caſe, with ſafety give a gentle purge of *diacaſſia Edinb.* diſſolved in whey; or we may prepare a drink of *manna* and tamarinds, haſtily boiled together in water, and being ſtrained, made palatable with a little ſyrup of raſpberries; but we ought not to neglect giving the patient a cordial during the operation. Such a one may be prepared, of cranberry water, four ounces; cherry wine, two ounces; 15 drops of the *liquor anodyn. Hoffm.* and two or three drachms of ſyrup of raſpberries.

If the fever ſhould be too violent, we are obliged likewiſe to bleed in this period, tho' it will hardly be wanted, provided we drink copiouſly of the juſt now mentioned cooling mixture.

I here repeat what has been ſaid in the ſecond period, that theſe remedies prove often exceedingly good, but ſeldom ſucceed in a very malignant ſmall-pox; therefore I now adhere to the uſe of bark, and whoſoever preſcribes it according to the advice I have before given, will find that this remedy often works miracles: and that he will have no occaſion for other remedies.

It was mentioned as a favourable ſign, when the face continues ſwelled till the eleventh day; but in conſequence of that, the eye-lids will ſwell and ſtick together, ſo that the patients are unable to ſee during that time. A great number of phyſicians do not meddle at all with this; but I think it ſafer to open the eyes once a day, in order that we may ſee if they ſuffer in any manner. They may moſt eaſily

be opened by being licked with the point of the tongue. If nobody can be perſuaded to do this, we may dip a piece of ſoft linen in milk mixed with water, ſqueezing it out, and applying it moderately warm to the eye-lids, ſo long till by the fingers we are able cautiouſly to divide them.

I promiſed to ſay ſomething about the ſpitting, which is an evacuation indiſpenſably neceſſary in a malignant ſmall-pox, portending much evil when it flows with difficulty, or ceaſes too early. Spitting is ſeldom obſerved in children, but older perſons begin to ſpit already on the fifth or ſixth; nay ſometimes on the fourth day, from the firſt ſeiſure. The ſooner it begins, the worſe the diſeaſe will prove. It flows very eaſy in the beginning, being then thin, and very copious; but when the tenth and eleventh day comes on, it will grow thick and viſcid, is performed with great difficulty, ſo as to be even ſuffocating. This is prevented and relieved with a copious and warm drink, by frequent gargling, and injections by ſyringes: as a gargariſm may be uſed the *decoctum pectorale Lond.* taking a pint of that, and mixing it with one ounce of *acetum ſcilliticum*, and one ounce of *mel roſarum*; or decoction of carrots, mixt with a little ſyrup of violets; or one may take *radix altheæ*, (marſh mallow root) two ounces, four figs; boil them with three pints of water, till the half is conſumed; or boil bruiſed flax-ſeeds, half an ounce, in a pint of water, till two thirds are remaining, that being ſtrained, add a little clarified honey. The ſame ſerves alſo for ſyringing, which promotes the ripening and ſcaling of the puſtules in the throat; but nothing promotes the ſpitting better, and relieves the throat, than drinking warm milk with a little ſugar to it; ſometimes by itſelf, ſometimes mixed with tea, barley water, or oat-gruel.

The patient ought not to lay on his back, neither in this period nor in the following, but turn now on the one, now on the other ſide, in order to prevent the *ſaliva* from falling down in the throat; therefore one muſt likewiſe put a ſoft and warm napkin under that cheek he leans on, and ſhift it as often as it is neceſſary.

The

The Fourth Period.

If all has ſucceeded favourably, and in its order, nothing will be wanted in the fourth period, but good nurſing and drink; eſpecially if the ſmall pox is benign, the ſpitting and breathing performed eaſily, the puſtules ripen and dry, the ſwelling which has hitherto been in the face, is transferred to the hands and fingers, and afterwards to the feet, the ſleep is likewiſe good, together with a beginning of appetite.

But if the ſmall-pox is of a malignant kind, a new fever will then ariſe from the *pus* in the puſtules, which is not wholly perſpired through the ſcales, but partly abſorbed into the blood; this fever will likewiſe ariſe from the great quantity of foul ſubſtance collected in the ſtomach and bowels, when the patient has been coſtive during the courſe of the diſeaſe; therefore that being taken up, and carried into the blood by the lacteal and abſorbent veſſels in thoſe parts, it muſt neceſſarily cauſe a fever by irritating, and that of the putrid kind. This will not go off till the above-mentioned *pus* is wholly carried out of the body; nay if it be transferred to the brain, there cauſing a difficult *delirium*, or a profound ſleep; or to the lungs, there cauſing a ſevere aſthma, an inevitable death will enſue: if it is transferred to the eyes or ears, the ſight or hearing will be loſt: it is therefore of great importance to prevent this fever if poſſible. The bark, together with a ſtrengthening diet, added to thoſe remedies which cleanſe the body from the *pus*, are the moſt effectual for that purpoſe; I mean ſuch as will raiſe the puſtules and promote the ſpitting, together with a copious diſcharge of urine. Gentle purges are likewiſe conducive to it, when uſed with the precautions I adviſed in the third period. Here it is alſo of ſome ſervice to foment the arms, hands, legs, and feet, and to apply a ſinapiſm, in caſe the pulſe is low and weak.

It often happens, that the *pus* is thrown to ſome place on the ſurface of the body, there forming a tumour, ſometimes attended with pain, but commonly indolent: if this matter gets an iſſue, and is not

abſorbed again, the patient will be then quite cured. We ought therefore not to neglect to look for this; if no tumour is to be ſeen, we order the patient to cough, inquiring if during the time he ſome where feels it: if there be found the leaſt ſign of ſwelling, apply on it directly a poultice boiled, of milk, wheat, flour, a baked onion, and a little ſaffron; as ſoon as we obſerve any matter under it, open it with a lancet.

As ſoon as the puſtules dry in the face *, we ought to begin to anoint the cruſts in the ſame order as they are formed, but not earlier. I have always employed a ſoup of groats for that purpoſe, with a little ſugar in it, and an oil prepared by ſhaking one ounce of oil of almonds or olives with a drachm of *oleum Tartari*. Theſe two remedies ought to be bruſhed on the cruſts alternatively, ſo that when the firſt has been employed once, the other is to be uſed next.

Sometimes I have uſed veal-broth, ſometimes warm milk, in which a fine ſponge has been dipped, in order to ſtreak the face over frequently. Some recommend to anoint the cruſts with a quill dipped in a mixture of chalk and cream.

The patient having at laſt gone through the ſmall-pox, and the cruſts ſcaling; it is highly neceſſary that he ſhould be purged ſix or ſeven times, at the interval of four days between each purging. The *electuarium lenitivum Lond.* may be uſed for that purpoſe, about two, three, or four drachms, according to the age of the child. For, if this be neglected, the child may eaſily get affected with weak lungs, bad eyes, ſcabs or boils. It is not probable, that thoſe who have once had the true ſmall-pox, can receive the infection a ſecond time †. I have often heard it mentioned, but as yet

* Some pretend, that the ſcars of the ſmall-pox on the *Negroes* are white; they are ſomething paler in the beginning, but ſoon grow black again: the ſame is the caſe with the ſcar after inoculation, which I have ſeen in two of them.

† The diſeaſe called *Framboeſia Guineenſis*, likewiſe affects a perſon no more than once. See *Sauvages Noſol.* iii, ii. p. 425.

never found any inſtance of it well confirmed, nor, to my knowledge, any other experienced phyſician in this kingdom. One may indeed get the chryſtalline, or watery kind, but never the true ſmall-pox. Some perſons, who have had a very gentle ſmall-pox, or only one ſingle puſtule, have been apprehenſive of getting the diſeaſe again, but yet were always ſafe, tho' they converſed with perſons ſick of the malignant kinds. Some have choſen to be inoculated for greater ſecurity's ſake; but the infection never would take, provided they had had the diſeaſe before, either by a natural contagion, or by inoculation.

When the contagion of the ſmall-pox begins in a place, and the queſtion is propoſed, from whence they firſt got the contagion? The anſwer is obvious, that this infection has been circulating from one place to another, either by people or baggage, ever ſince the firſt introduction of the diſeaſe into *Europe*.

When the ſmall-pox is conveyed to a place, it will not leave off, as long as there remains any body ſuſceptible of the contagion, unleſs thoſe who dread the diſeaſe moſt take the greateſt care that it do not reach them or their children: that the winter's cold is not able to ſtop the infection, I found very plainly at *Upſal* in the year 1743.

There is no inevitable neceſſity, that every individual perſon muſt have this diſeaſe; how great a part of mankind is there, who have lived in *America*, without ever having had the infection? For the ſmall-pox was firſt conveyed there from *Europe*, in the year 1492. Nor was it ever in *Greenland*, till it was conveyed there from *Denmark*, in the year 1733. Phyſicians have found, that among a hundred perſons inoculated for the ſmall-pox, there are commonly about five on whom the contagion does not take, and who conſequently are ſure not to get the diſeaſe; therefore among a hundred perſons, there are 95 who have in their blood a diſpoſition ſuſceptible of the ſmall-pox, and which never can break out, unleſs by infection. The ſame is the caſe with the plague; it never ariſes in us of its own accord, but is conveyed from infected countries, and never can attack thoſe who fly in time.

Whether

Whether there be any one among us, who never has had, or never gets the ſmall-pox, is very difficult to aſcertain. If the general rule be certain, that the inoculation does not take in five among a hundred, it is ſure enough, that theſe will not get the diſeaſe. But it remains nevertheleſs a doubt and an uncertainty, whether they have not had them in their infancy, and of ſo gentle a kind, that the parents have looked upon the eruption as pimples. This puts me in mind of a young lady, who had the diſeaſe ſo favourably, that her parents did not ſuſpect it to be the ſmall-pox, but took her in their coach, on going to uſe the mineral water at *Sätra*. I met them by chance, and the journey was deferred till the diſeaſe was over. Beſides we know ſeveral children to have had the ſmall-pox at their births; from whence it follows, that a part may have had them in their mother's womb. Of ſeveral ſuch inſtances, I will here only relate one, which happened about the year 1756. A child had cruſts and ſcars of the ſmall-pox on its body, when it was brought into the world; for the eldeſt ſon had the ſmall-pox a little before this was born: all the other children got the ſmall-pox ſix years after that, except this, who certainly had had the infection already in its mother's womb *. We have likewiſe inſtances of thoſe, who firſt received the infection when they were old. A man at *Upſal* got the ſmall-pox after his 50th year. Nevertheleſs the event was ſucceſsful. A lady in *England* died of the ſmall-pox in her 72d year. Another was infected in her 73d year, and with that remarkable circumſtance, that the diſeaſe was firſt benign, but afterwards on the 15th day proved ſevere, and the puſtules became confluent. In the pariſh of *Torſong*, and village of *Sylla*, in the great province of *Kopparberg*, a woman got the ſmall-pox after having paſt her

* Phyſicians have written down ſeveral inſtances. See *Mead, de Variolis*, p. 66, 67. *Fulleri Exanth.* p. 192. Nevertheleſs, it does not always happen that a mother, who has the ſmall-pox, infects her *fœtus*. See *Kirkpatrick*, c. i. p. 21.

both year; ſhe had a great number of puſtules, but happily recovered. See the news-paper of the provinces, for the year 1770, No. 35.

We know very well, that fear cannot be the cauſe of the plague, as children have been infected by it ſoon after their birth; the ſame is to be underſtood of the ſmall-pox; for a *fœtus*, when ſtill in the womb, or ſoon after being brought into the world, is frequently infected, before it knows either what fear or ſmall-pox ſignifies. However the infection takes more eaſily on thoſe who dread the diſeaſe; for fear debilitates the nerves and heart, and makes the circulation of the blood ſlower, which cauſes the abſorbent veſſels to be more dilated, and to admit the infection the more eaſily.

The ſmall-pox carries off yearly the tenth part of *Swediſh* children. It is remarkable, that notwithſtanding the male children are more numerous, nevertheleſs a greater number of the female ſex die of the ſmall-pox. On the contrary, the other diſeaſes of children kill more boys than girls, ſo that both ſexes are already at the fifth year of an equal number; but after the 15th, the female ſex is found by far more numerous. See the *Tranſactions of the Royal Academy of Sciences at Stockholm, for the Year* 1755, p. 247.

In the ſmall-pox, from the natural contagion, I find that Baron *Dimſdale* has likewiſe uſed, with ſucceſs, his new method of treating this diſeaſe the ſame as in inoculation. Some caſes of this may be ſeen in his book, of a *New Method of Inoculating*, &c. and which is now tranſlated into the *Swediſh* language, by *Archiater Beck*.

In the *Tranſactions of Zurich*, vol. ii. p. 386—414. is to be read a well kept journal of a cure of two children, ill of a ſevere ſmall-pox, performed by Dr. *Zimmerman*, with aſſiduity and good judgment *.

* Profeſſor *Baldinger* in *Jena*, whoſe merits in phyſic are well known, has printed this chapter ſeparately, together with that of Dr. *Tiſſot*, on the ſame ſubject. He has thereby conferred much honour on me; but at the ſame time diſcovered my inferior talents, by placing me together with a man of ſuch great merit.

CHAP.

CHAP. XIII.

On the Inoculation *of the* Small-pox.

THE accounts purpoſely kept all over *Sweden*, on the mortality in certain diſeaſes, ſhew that the ſmall-pox is one of the moſt fatal, and conſequently one of the greateſt cauſes of the ſcarcity of people, we ſo much complain of in this kingdom; therefore let us here conſider the means and remedies, which, next to the Almighty, will enable us to endeavour, that but few perſons ſhall die of this diſeaſe, otherwiſe ſo lethiferous.

The ſmall-pox is contracted ſeveral ways: it would be of importance to know which is attended with the leaſt danger. The ſureſt would be, no doubt, to avoid the contagion by flight; but the mutual connection of mankind is indiſpenſable. We meet one another in fairs, in churches, and a thouſand other places. Our children lately deceaſed of the ſmall-pox are buried in the church; we ſtand and walk on their monuments; we breathe the air infected with the *variolous* infection, which beſides is carried from one houſe to another by dogs and other animals. In that reſpect, we have great reaſon to advance, that the ſmall-pox is a diſeaſe unavoidable to the commonalty of mankind. Bleſſed therefore be he who can diſcover an antidote againſt this poiſon!

The late Doctor *Boerhaave* thought that he would be able to prepare a remedy of antimony and quick-ſilver, whereby the *variolous miaſma* itſelf could be deſtroyed. Probably a few of his experiments ſucceeded; but repeated trials at laſt made him doubtful, as he, being a thorough honeſt man, would otherwiſe have made ſo great a diſcovery public.

It is probably on this foundation, that the phyſicians of *Philadelphia* gave thoſe they had inoculated, every other night, a little *mercurius dulcis* and *antimonium diaphoreticum*, and every other morning *pulvis cornachini*,

cornachini, and at laſt *ſulphur. auratum antimonii* mixed with a little *mercurius dulcis*. Notwithſtanding this boldneſs, the above phyſicians had the ſatisfaction to find, that of 700 inoculated, only one died; ſee *Kirkpatrick's Analyſis*, *p.* 329.

Boerhaave was likewiſe of opinion, that we might ſuffocate this diſeaſe in its infant ſtate, or before the ſmall-pox ſhould break out; he looked upon the ſmall-pox as an inflammatory fever, and on each puſtule as a boil; therefore he thought, if this inflammatory fever was cut ſhort, or immediately moderated by copious bleeding, clyſters, ſufficient drink, baths, a cool room and refrigerant remedies, that no ſmall boils or puſtules would enſue; perhaps he himſelf has frequently ſucceeded in this: this method was with the ſame ſucceſs practiſed by *De la Metrie*, (if we may believe the aſſertions of this declared enemy to both religion and morals): the honeſt and ſincere Dr. *Cleghorn* uſed the ſame method, in hopes to ſave the lives of thoſe who were infected with a fatal ſmall-pox, which raged in *Minorca*, in the year 1746: few were thereby relieved, and no eruption enſued in three or four ſubjects; but notwithſtanding his care in employing all that uſually proves conducive in inflammatory fevers, the moſt part miſerably loſt their lives. The ſame we find of Dr. *Tralles diſſertatio epiſtolica, de methodo medendi variolis hactenus cognita, ſæpe inſufficiente, &c.* beſides, it is uncertain, whether thoſe who are cured in this manner, can make themſelves ſure of not being infected again another time; thoſe who are cured of a pleuriſy can ſeveral times get that inflammatory fever again.

They have ſucceeded better with the common people in the principality of *Wales*, in *Saxony*, and in *Sweden*, chiefly in the provinces of *Oſter-amd*, *Weſt-Gothland*, where it has been cuſtomary for a long time to purchaſe the ſmall-pox; but as they have not underſtood ſo well to prepare the body before the *variolous* matter was applied, we may find that their method of inoculation is not ſufficiently ſafe enough.

The old pious Doctor *Lobb* entered into both the opinions of Doctor *Boerhaave*, and thought that he had found a powerful remedy in the *Æthiops-mineralis*,

mineralis, which either could alter the nature of the *variolous* matter, or diminiſh this poiſon to ſuch a degree, after it was already mixed with the blood, that in fine it would not be neceſſary to ſtop at the ſurface of the ſkin, and then form pocks, but be qualified to perſpire with eaſe: therefore when any contagion of a ſmall-pox was ſpread, he gave thoſe who aſked his advice, of the before-mentioned *æthiops mineralis*, every morning and night, mixed with a little *flores ſulphuris*, and told them afterwards to keep a good diet: he aſſerts, that ſeveral who could not avoid ſtaying with patients affected with the ſmall-pox, were for that time preſerved from the contagion by means of this remedy, and that if any one happened to be infected, he had the diſeaſe very favourable; nay, he went ſo far as to think that he could, by a more free uſe of this ſame powder, quite ſuffocate the variolous fever in its firſt period, and ſo far alter the infected blood, that the poiſon of the ſmall-pox ſhould not take effect, but be partly obliged to tranſpire, and partly to be carried off with the urine; however he does not confirm this tale by any example.

To take of the *æthiops mineralis*, from ſix, ten, to 20, or 30 grains, twice a day, according to the age of the patient, I think to be very good, but it is attended with three inconveniences. 1. That a child finds difficulty in taking it, unleſs it be mixed with honey. 2. If he who takes it is diſpoſed to looſeneſs, the *æthiops* will intirely be carried off with the ſtools, and in that caſe nothing will enter the blood, and conſequently it cannot prevent the contagion, or its effect. 3. On the contrary, if any one takes it who is ſubject to coſtiveneſs, he may eaſily, as experience has confirmed, fall into a ſalivation; this can however be prevented, by combining the *æthiops* with ſome gentle laxative and a little camphire; in conſequence of this, we find that the pills of Mr. *Belloſt* are likewiſe a good preſervative.

The late Biſhop *Berkley* enumerated, among the many qualities of tar-water, that of preſerving from the ſmall-pox, or at leaſt rendering this diſeaſe more favourable: we are to begin with it as ſoon as the ſmall-

pox

pox begins to ſpread in the neighbourhood, by drinking a larger or ſmaller glaſs of it morning and night, according to the age of the patient, thus continuing it till we either get the ſmall-pox, or till the contagion has ceaſed: he pretends likewiſe, that it may be taken with ſucceſs during the courſe of the diſeaſe itſelf.

This is a remedy which may always be procured, and without any expence: therefore the common people ſhould give it to their children, who have not yet had the ſmall-pox, in order to uſe it as above-mentioned, from the beginning of the contagion till it has ceaſed; it would be too tedious to quote all the *caſes* which ſome *Engliſhmen* have written down, to prove this quality of the tar-water. Let it ſuffice then to obſerve what Doctor *Cantwell* has related. In a houſe in *Scotland* were four children; one of them caught the ſmall-pox; their father let two of the others be inoculated, but ordered the fourth to drink tar-water; all theſe four lay in the ſame room; thoſe three who had the ſmall-pox were ſucceſsfully cured, but the fourth who drank of the tar-water did not get infected; the father ſuffered it to be inoculated and to drink the tar-water again; but the contagion did not take. Two months after the inoculation was tried again, and no tar-water given it to drink; the child then at laſt got the ſmall-pox, but of ſo gentle a kind that we could ſcarce look upon it to be diſeaſed.

Some years ago, and in the pariſh of *Longthora*, which is ſituated about 15 *Engliſh* miles from *Upſal*, a ſmall-pox raged, of ſo malignant a kind, that almoſt every child who was attacked with the diſeaſe died: as ſoon as their parents, on my intreaties, let their children drink ſome tar-water, both before and during the diſeaſe, the contagion turned ſo favourable, that ſcarce a ſingle one died.

The preparation of tar-water may be made as follows: take ſix quarts of water, and three pints of good tar, ſtir them together for three or four minutes with a ſpoon or a ſpatula; when the veſſel has afterwards ſtood for 48 hours, and the tar has had time to ſettle at the bottom, decant the clear water, and put it by in bottles; this is tranſparent, and as white as Spaniſh wine; its taſte is ſomething ſouriſh, and grows

ſtill more ſo if we evaporate a little of the water, and then it changes the colour of ſyrup of violets into red, and ferments with alcali; it conſiſts of a fine oil, which by means of a ſmall portion of its acidity is kept diſſolved in the water, and conſequently makes a fine ſoap; of a diſſolvent, and at the ſame time antiputreſcent quality.

In the year 1744, when a ſevere ſmall-pox raged at *Upſal*, I began to give children preſervative pills; and had the pleaſure to find, that all thoſe who took them, either did not get the ſmall-pox, or had a very favourable kind. They have afterwards been uſed over the whole kingdom with the ſame ſucceſs; and I never as yet heard that they failed, when the parents of the children had ſeen that they were really taken. Take the compoſition as follows:

℞. *Calomel rit. ppt. gr.* xii.
Camphora, gr. viii.
Extracti Aloës, gr. xii.
Gummi Guajaci, gr. xvi.
M. f. ſ. a. Pill. pond. gr. 2. *Foliis argenti obducendæ*
Dr. Sr. Preſervative pills.

The doſe may eaſily be aſcertained for each perſon, that being the proper quantity which procures three or four ſtools. For inſtance, a child two years of age may take three pills; one three years old may take four; one five years old may take ſix; but a child being more than ſeven or eight years of age, muſt not take more than ſeven: if this doſe ſhould not be ſufficient to procure ſtools, then I add to each doſe of the pills one or two grains of the roſin of jalap, previouſly well rubbed with almonds. Theſe pills are to be taken twice a week; for inſtance, every Sunday and Wedneſday in the evening, and then they will operate on the Monday and Thurſday in the forenoon. During the uſe of this medicine one ought not to eat ſalt food, and meat only at dinner; one may walk out in the open air as much as one chuſes, except on thoſe two days the pills are operating. When we know that the ſmall-pox is in the neighbourhood, or in one's own houſe, or we cannot avoid ſeeing thoſe who viſit the houſes where any one is affected with the ſmall-pox, then

then we ought immediately to give of the above-mentioned pills to the child, letting it continue taking them till either the contagion has ceaſed, or till we are otherwiſe ſure that it cannot reach the child: if we leave off the taking of the pills before that time, then we cannot attribute it to their fault, in caſe the ſmall-pox ſhould prove of a bad kind; we ought never to take a great quantity at once from the ſhops, for the camphire is eaſily volatiliſed, which however is moſt conducive in preventing the contagion; therefore the infection will not ſucceed, if the variolous matter be mixed with camphire and pomatum: but one may inoculate the ſmall-pox with this unguent, by its being well rubbed on ſome part of the ſkin, provided the camphire is left out. That Calomel diſſolves the blood, but eſpecially the humours, is very well known; that it prevents the infection of the ſmall-pox, may eaſily be inferred from the *caſes* I have given in the tranſactions of the Royal Academy of Sciences at *Stockholm*, for the year 1751, *page* 32; and conſequently theſe pills muſt, in reſpect to the ſmall-pox, be of a much greater effect than only ſimply to purge; that they have been of ſervice, is ſufficiently proved by narratives, from the provinces, publiſhed in the news-papers. I am for the moſt part certain, that every child who is otherwiſe healthy, ſtrong and well fed (for a weak child ought rather to be prepared with the Jeſuits bark), will have a favourable kind of ſmall-pox; 1. If it continues the uſe of theſe pills for four weeks; 2. If during that time it does not live on much nouriſhing food, and eats but little meat, 3. then viſits any body affected with the ſmall-pox, and as ſoon as it is found thereby infected, 4. purges by the pills again, and 5. ſuffers itſelf to be ſcratched, or ſcarified on ſeveral parts of the ſkin with a pin or a lancet, as for inſtance on the arms and legs. This latter will be of very great ſervice and importance, as we know, if any body happens to ſcratch himſelf by a pin, or any other accident at the time of eruption, many puſtules will break out on both ſides of the ſcratch, in the ſame manner as they break out round the inciſion made for the inoculation. I moreover knew a child that got a ſevere whipping on its poſteriors by an impatient mother, the day before the

eruption; this was attended with ſo good an effect, that the child got only one poſtule in the face, but a had a great many about the marks of the rod; conſequently the above-mentioned ſcratches made in the ſkin, are the beſt remedy to preſerve the face.

In the northern provinces of *Sweden*, it is cuſtomary to hang a little muſk on children, as a preſervative againſt the ſmall-pox when it is ſpread in the neighbourhood. I have not as yet had ſufficient experience of this; I ſhould think it would ſucceed, provided it were true, that the variolous contagion depended on inſects: but another method of inoculating uſed by the Chineſe, (for they have ſeveral methods) ſeems to be ſomething againſt this. They take one grain of muſk, putting it betwixt two large, or four ſmaller ſcales or cruſts of the pocks; this is enveloped in a little cotton, and put into the noſe *.

Others again are accuſtomed to carry quickſilver on their body, in order to prevent the infection of this diſeaſe. *Belloſte* relates, that a noble lady had carried it on herſelf above 50 years, and was then paſſed the 80th, without having had the ſmall-pox: *Belloſte* himſelf uſed it in the ſame manner continually, and with the ſame intention, and had not then had the ſmall-pox in his 70th year; he was of opinion, that the quickſilver forms a vapour about the body which the inſects fly from; for he looked upon them as the cauſe of the ſmall-pox, plague, and other eruptions: it is very probable that quickſilver ſends ſuch an exhalation from it, for if we lay a little of it in the middle of a large diſh, and afterwards a *lumbricus* on it, we may perceive how the worm ſeems to be in pain, and retires to the edges of the baſon with all its ſpeed, and to the utmoſt of its power. Allowing ſuch remedies not to be of great ſervice, they will however

* In the caſes which the ſociety of ſurgeons have printed in *Stockholm*, for the year 1769, fat of ſeals is praiſed. It is ſaid, that the pocks will be but few and favourable, if any one who is infected takes twice a day a few drops of an oil expreſſed from it, continuing it till the eruption is performed.

do no harm *; they quiet the minds of many who otherwiſe would be in daily fear, and in that reſpect, at leaſt, they are uſeful.

A lady from *Finland*, ſome years ago came over to *Stockholm*, and diſcloſed to the court a remedy which ſhe had tried, in order to make the number of puſtules in the ſmall-pox but inconſiderable; it was communicated to me, and conſiſted in only this, that the patient ſhould wear ſcarlet cloth on his body inſtead of linen, and have his face covered with the ſame. I applauded her good intentions, but looked upon the remedy as inſufficient: I have ſince found that Doctor *Miag*, at *Baſil*, let a child, on which he had inoculated the ſmall-pox, from the beginning of the fever lay with ſtockings on made of ſcarlet, without ſoles. He expected that they would drive the ſmall-pox down to the feet, by means of the gentle friction or titillation they would cauſe, as well as by the retention of the perſpirable matter; and hoped thereby to preſerve the face. When the time was elapſed in which the ſmall-pox ought to have appeared, the ſtockings were taken off, expecting to find a great number of puſtules in the legs; but to his great ſurpriſe he found only a couple of them there; as the body was well prepared, and the pores well opened by baths and waſhings, it appeared to him probable, that the greater part of variolous matter had thereby perſpired; he propoſes beſides to ſtrow ſome irritating powder in ſuch ſtockings, for inſtance, as of muſtard ſeeds. See the *Acta* of *Zurich*, vol. iii. *p.* 103. He tried it afterwards, but was obliged the next morning to take off theſe ſtockings ſo beſtrowed, as the child could not ſuffer the heat and irritation they cauſed. See l. c. *p.* 121.

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* The rich are generally cheated by ſuch remedies; as it happened with *Arnold*'s bags againſt apoplexy. Their uſe at laſt ceaſed, when it was found that ſome of thoſe who had worn them died notwithſtanding, of the apoplexy. It is however happy when ſuch remedies do not occaſion any miſchief, as it happened to thoſe, who in hopes of avoiding the plague, bought and wore on their breaſt an amulet of arſenic. See *Diemerbroek de peſte*, l. iv. *p.* 319.

Doctor *Caſim. Medicus* has for a long time conſidered of the methods of eradicating the ſmall-pox, and thinks that he has found the means for it, which he diſcovers in the ſecond volume of his *Samlung von Beobachtungen*, *p.* 182. He once began to give his patients only the tincture of bark in ſome diſtilled water, when a ſevere kind of ſmall-pox raged, but not till after the eruption; this he found to make the diſeaſe favorable. He gave likewiſe the tincture of bark to a child half a year old, from the firſt beginning of the diſeaſe, and found that it only had two pocks. See l. c. *p.* 726, to *p.* 732. This encouraged him to go ſtill farther. As he knew that the firſt fever of the ſmall-pox was an inflammatory one, he thought like *Boerhaave*, that if this fever could be ſubdued, no eruption would enſue; therefore he adviſes to uſe from the very beginning, all that is proper in inflammatory fevers, as bleedings, emolient clyſters, cooling emulſions, and a copious drink of barley water: but the peculiarity of his diſcovery is, that at the ſame time he gives the bark in powder, which perhaps no one before him has thought or ventured on. He is however careful to cleanſe the ſtomach beforehand with an emetic, in caſe it ſhould be wanted, and in that he is very much in the right, as the bark will be ineffacious if the ſtomach is loaded with ſlime, bile, or crudities; ſhould any thing of that kind be in the bowels, then he preſcribes purges of manna, tamarinds, and a little jalap; or he gives magneſia and *cremor tartari* together with an emulſion. If the firſt fever is not very high, he uſes only to mix the bark with a little *cremor tartari*; if, contrary to our expectation, the ſmall-pox ſhould break out and not immediately diſappear, then he adviſes to apply a veſicatory of cantharides, which is to drive the eruption to ſome place where it cannot deform the patient, or do any harm, and to prepare an exit for the variolous matter by the ſame means.

All this ſounds extremely well; time will ſhew whether experience will confirm it or not. As far as I can find, the author ſeems not to have yet tried it in the year 1765; but only makes this concluſion in conſequence

conſequence of the theory, and the ſucceſs of the method in other inflammatory fevers, (ſee l. c. *p.* 432—464.) and by the ſimilarity with the meaſles, miliary and other petechial fevers, &c. He alſo adviſes to try this on children in inoculating them, in order to find whether the bark would then prevent the eruption.

The late profeſſor *Monro* relates, that a lady ſuffered her children to uſe a bath every day during the courſe of a ſevere ſmall-pox; the bath being prepared of water and juniper-berries, and their room beſides ſmoaked with the juniper-tree; this had ſo good an effect that among eight or nine children, not one was infected: I ſhould not have mentioned this, had not ſo great a man as Dr. *Monro* recommended the trial of it.

However, the ſureſt method to prevent the dangerous effect of the ſmall-pox, is to inoculate * it on children, while they are ſtill young, and in the manner as is now cuſtomary in *England* †. It is both very diſagreable

* See more of this in the perfect and well written narrative by Profeſſor *Dav. V. Schulzenheim*, on the inoculation of the ſmall-pox; and in the extract of Mr. *Chaiſe's Eſſai apologetique*, under the title of Anſwer to the Objections, *&c.* publiſhed in *Sweden* by Mr. *Roſen*, firſt chaplain to the king.

† The famous lady *Mary Wortley Montague* is the firſt who introduced the inoculation of ſmall-pox into Europe. She had her ſon inoculated at *Conſtantinople*, at the age of ſix years; and her daughter inoculated in 1722, after their return to *England*. However, for the ſatisfaction of the court, the experiment was firſt made on ſix convicts, who were ſucceſsfully inoculated, and thereby eſcaped their ſentence of death. The great king *Charles* the XIIth of *Sweden*, during his ſtay at *Bender*, ordered a circumſtantial narrative to be written concerning the inoculation of the ſmall-pox, and with what great ſucceſs it was practiſed among the Turks; this was ſent to *Stockholm*, but I have not as yet been able to find out whether any one at that time made tryal of it in *Sweden*.

It is both ſtrange and unaccountable to find how many means have been taken in *England*, by thoſe who were againſt the inoculation, in order to deter the nation from

disagreable and inconvenient to lie under a neceſſity, either to take the *æthiops* or the preſervative pills, or to

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it. Among others, a wretched fellow named *Jones*, related that he had ſucceſsfully inoculated his daughter, but ſhe three weeks after that got the ſmall-pox again by the natural infection; on inquiry, he was obliged to confeſs in letters to Doctor *Jurin*, that he did not know what inoculation was, and that he had never inoculated any human being during his life. *Kirkpatrick* has introduced the whole letter in his new edition of the *Analyſis* of, &c. p. 147. The inoculation of the ſmall-pox has met with no declared enemy in *Sweden*, but moſt likely has ſome ſecret oppoſer; as the writings of M. *de Haen* have been placed in houſes of the utmoſt conſequence, without being able to diſcover from whence. In the year 1761, ſeveral houſes were mentioned, in which it was ſaid that inoculated children had got a ſevere ſmall-pox again. I went on purpoſe to viſit both the parents and children, and found, on enquiry, that all was an impudent fiction; this, and all the inventions employed in *England*, have perſuaded me that the *caſes* which are related from other countries againſt the inoculation, may be equally falſe and uncertain. Thoſe who chuſe to know the origin and fate of the inoculation in this kingdom, will find it in a well compoſed gradual diſſertation, by profeſſor *J. A. Murray* in *Gottingen* 1767, intitled, *Hiſtoria inſitionis variolarum in Suecia*. The Dr. and Aſſeſſor *Haſt* has done the greateſt ſervice to inoculation in this kingdom; he inoculated in one year 229, the greateſt part of the children of the common people in *Oeſterbothnia*. We cannot ſufficiently extol the great care of his majeſty, who in a conſpicuous manner has encouraged both the Doctor and the common people to this purpoſe. See the news-paper from the provinces for the year 1763, No. 86.

The royal college of phyſicians have likewiſe continually encouraged the phyſicians of the provinces to inoculation, and chiefly ſent the Doctors *Aman*, *Nordblad*, and *Sahlberg* to *Norrland*, and *Ekman* to *Oſtrogothland*, where they have inoculated a great number of the common people's children. Aſſeſſor and Doctor *Wahlin* has alſo inoculated as many ſubjects as were to be met with in *Jonköping*, as alſo ſeveral children ſent to him every day from the country; the inoculated were ſuffered to walk about, nevertheleſs the infection was not ſpread: a ſingle child on which the inoculation did

to drink tar-water for a long time at each contagion of the ſmall-pox; but it is dangerous to live expoſed to this ſevere diſeaſe when the body is not well prepared; and there is ſtill more danger in not being infected before we are advanced in years. We may be ſurpriſed by the ſmall-pox on our travels, at an inn, or at places where we muſt be deſtitute of both phyſicians, proper medicines, and nurſing; we may happen to catch the infection during the heat of the ſummer, when we have lately been exhauſted by ſome other ſevere diſeaſe, or by night-watching, or by labour; or at the time ſome more ſevere epidemical diſeaſe is raging, ſuch as the miliary fever, pleuriſy, peripneumony, and petechial fevers; or when we have been overloaded with ſpirituous liquors or improper food; or from the body being full of bad humors. Ladies eſpecially ought to inſiſt on being inoculated, as their beauty is ſo often loſt or endangered in the ſmall-pox by the natural infection; their own life and that of their *fœtus* being greatly expoſed thereby during their pregnancy. The many inſtances of thoſe who by this diſeaſe have loſt their ſight, hearing, and ſpeech, are ſtrong motives enough for us gratefully to accept of a remedy which prevents all theſe misfortunes. The more ſenſible perſons, who know that the loſs and want of people is of great conſequence to a kingdom, and that the tenth part of *Swediſh* children are carried off by the ſmall-pox, ought by their example to actuate others to inoculation. What a great loſs is it to a country like *Sweden*, to loſe yearly 9000 perſons by the ſmall-pox and meaſles *! We ought likewiſe to be encouraged

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did not take, was infected by being in the ſame room with its ſiſters who had the ſmall-pox from inoculation. Want of room and opportunity hinders me from enumerating any more: each in his province has ſhewn how uſeful they are to their country.

* One of the commiſſioners for counting the people has communicated to me the following Liſt of the number of thoſe who within 16 years have died of the ſmall-pox and meaſles.

encouraged to this by the example of other civilized nations, who have already received this remedy, and found it to be both innocent and useful, and the best reparation for the want and loss of people in a kingdom; and besides, I am daring enough to advance, that we ought to allow ourselves to be persuaded to inoculation by physicians, who ought, and do in fact understand it, and are proper judges in those matters: every thing is in favour of inoculation, as theory, experience, religion and morality: in the small-pox of the natural contagion, one person out of seven dies that are infected *. In the hospital of *London*, where those are taken

Years.	Males.	Females.	
1749	3659	3616	7275
1750	3838	4015	7853
1751	3360	3393	6753
1752	5398	5514	10912
1753	4362	4570	8932
1754	5103	5288	10391
1755	3680	3764	7444
1756	5868	5960	11828
1757	5643	5660	11303
1758	3979	3913	7892
1759	2543	2629	5172
1760	2276	2415	4691
1761	3761	3884	7645
1762	6088	6324	12412
1763	8554	8819	17373
1764	3180	3138	6318
	71292	72902	141194

During the same time in *Sweden* were born 1,391,233 children, of whom 709,090 were boys, and 682,143 girls; consequently every 10th boy died in the small-pox or measles, and nearly every 9th girl, or more accurately 100 among 936: the two diseases are put together in the list, tho' they ought to be separated. But as the measles are much less *lethiferous* than the small-pox, the number of dead above mentioned are for the greatest part owing to the last.

* Mr. *De la Condamine (Lettre a Mr. Maty*, 1763) shews that in *France* 30,000 persons are lost every year in the small-pox, and that 25,000 of these might easily be saved by the inoculation. We are in a great measure obliged to him for the lives which are saved in *Sweden* by means of the

taken care of who get the ordinary ſmall-pox, two are loſt out of nine. Some years ago 270 died of this diſeaſe out of 300 children of the ſoldiers of the royal guards: among thoſe who are inoculated only one of 250, 425, or 500; nay if the preparation has been good, and nurſing alſo, perhaps not one would be loſt out of ſeveral thouſands; the ordinary ſmall-pox will moſtly infect the face; in the inoculated the greater number of puſtules breaks out on the arms, and the variolous matter is in part diſcharged through the wound of inciſion *: the eruption ſeems however not to be diminiſhed by that, as the ſuppuration of this inciſion is not very great in the beginning. It is ſaid that the ordinary ſmall-pox may return, tho' I never have ſeen it, nor has any one of the moſt accurate obſervers and phyſicians, as *Boerhaave*, *Mead*, *Chirac*, *Molin*, and the phyſicians in *Scotland* and *Sweden*; but of the many thouſands inoculated we have not had a ſingle ſuch inſtance † that is well authenticated. I cannot look upon

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the inoculation; for it was owing to his correſpondence with the Count and Senator *Scheffer*, that the inoculation was ſupported and encouraged by the Senate.

* What Mr. *Gandoger Foigny* ſays, in his *Traité de l'Inoculation*, *p.* 278, ſeems not to be in conſequence of experiments; it would be worth while to try it.

† That the inoculation did not properly ſucceed on the five ſiſters, who were inoculated by the late profeſſor *Roederer*, is demonſtrated by profeſſor *Wriſberg*, in his excellent treatiſe called, *De Inſitione Variolarum momenta nonulla*, 1765. Mr. *Foigny* relates, l. c. that Doctor *Richard de Hauteſiercy* inoculated a young perſon every fortnight for a whole year; the firſt of theſe inoculations took, but none of the others did; this young man was not in the leaſt injured in his health by ſo many inoculations. Dr. *Maty* let himſelf be inoculated, but without any effect, for he had already had the ſmall-pox before by the natural infection. Mr. *Gatty* ſays, that if an inoculated perſon only get a ſingle puſtule, that the *pus* in that ought to cauſe ſmall-pox for the ſecond time, and the *pus* in thoſe for the third time, and ſo further, for he would look upon it to be as many inoculations; but ſuch a thing has never yet happened. When the queſtion is, whether an inoculated perſon who has not got a diſtinct eruption, can make himſelf ſure of not having it again, or not? Mr. *Foigny* anſwers,

upon the contagion of the ſmall-pox to have taken by inoculation; 1. If the edges of the inciſion have not ſuppurated any thing; and 2. no fever has followed on the 7th, 8th or 9th day; and 3. after that no eruption either more or leſs has broke out, of which a part has ripened, ſuppurated, got cruſts, and at laſt is fallen off; or 4. in caſe no eruption has happened, and the wound of the inciſion has notwithſtanding diſcharged a copious matter for ſome time. That this is a variolous matter, is ſufficiently proved by Mr. *Wall* and Mr. *Gibbes* having inoculated others with it; ſee *Kirkpatrick*, c. i. *p.* 164 and 413. A noble lady was inoculated four years ago, and got only eleven puſtules; immediately after that ſhe ſlept in the ſame bed with her couſin, who then had the ſmall-pox, and without being infected. Profeſſor *Schulzenheim* inoculated 37 children in the hoſpital which is kept at the expence of *Free-maſons* in *Stockholm*; three years after that, when 17 other children were naturally infected by a malignant ſmall-pox, of which nine died, the former did not receive the leaſt injury, tho' they lived in the ſame ſame room with thoſe thus ſeverely infected.

The inoculation will not take in any one that has not a diſpoſition to the ſmall-pox: nevertheleſs he may find himſelf thereby ſecured and freed from that daily fear of being infected, which he otherwiſe would have had reaſon to apprehend *. We do not tempt the Al-

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ſwers, that we ought to take notice of the inciſion wound, whether it be round or oblong, large and ſhining: from that caſe he ſays, that ſuch a perſon has had the ſmall-pox. In a negro, inoculated by profeſſor *Schulzenheim*, I ſaw myſelf that the ſcar was in the beginning whitiſh, but within a ſhort time turned black again.

* My old true and worthy friend *V. Haller*, prepared his daughter for inoculation for four weeks together, in the year 1757; ſhe was not then 15 years old, but had her menſes. She lived during the time only upon vegetables, uſed warm baths for the feet, and took purges; then the inoculation was performed, but ineffectually, for it would not take, tho' repeated three times. She was afterwards married and had ſeven children, the greater part of whom ſhe nurſed herſelf during their ſmall-pox, without being infected. See his *Opuſc. Min.* iii. *p.* 356.

mighty

mighty by the inoculation of the ſmall-pox; nor do we thereby oppoſe his omnipotence; we are not ſo daring as to implore him for a miracle, but uſe this as we might another natural preſervative and remedy, which he has graciouſly deſtined for mankind, whereby they may ſubdue an unavoidable and frequently *lethiferous* diſeaſe. Why ſhould we think it ſin, to receive this bleſſed remedy gratefully, which providence has been pleaſed to ſuffer to be diſcovered, and which has already ſaved ſo many thouſands of lives? Nay how can it be conſiſtent with an honeſt and good conſcience, to ſuffer the natural infection to ravage among mankind, and deſpiſe or neglect a remedy which we know can preſerve us from the danger? See his excellency Count *Teſſin's* letters to the Hereditary Prince of *Sweden*, the ſecond Volume.

I hope no more arguments are wanted to perſuade my countrymen to receive the inoculation univerſally, eſpecially as it has already with ſuch great ſucceſs been performed in *Abo* and in *Upſal*, and 1757 in the month of *March* at *Stockholm*, in a noble family * whoſe example ſeveral will certainly follow †. Now only remains

* M. *de Geer*, one of the lords of his Majeſty's bed-chamber, together with his lady Baroneſs *Ribbing*, reſolved to inoculate their four children; which ſo much rejoiced the great counſellor Count *Teſſin*, that he in memory of this, ordered a medal to be ſtruck, on the one ſide of which ſtood the name of the Baroneſs, with this inſcription, *Ob infantes civium felicia uſu ſervatos*, and on the other ſide a ſnake with the inſcription, *Sublato jure nocendi.*

† This really happened afterwards, as may be ſeen in the narrative of the phyſicians of the provinces, ſent into the college of phyſicians, printed in *Stockholm*, 1761. What is moſt happy to the whole nation, the inoculation was in a happy hour, in the year 1769, likewiſe received into the royal family, and ſucceſsfully performed on five of them: four were firſt inoculated within the ſame hour, and the fifth ſome weeks afterwards; all of them fell ſick on the fifth day; four were inoculated by a ſmall veſicatory of cantharides, and the fifth according to his own choice by inciſion. The *variolous* matter for inoculation was taken the day before; the wounds were alike in all, the cruſts on them acquiring a dark pewtery colour on the ſeventh day, which was the day before the eruption. All were before prepared for

mains for us to conſider how the inoculation itſelf is to be performed.

The ſmall-pox may be inoculated on young and old, full grown perſons and tender infants: I rather would not chuſe to inoculate on the latter, before the *meconium* is carried off, and a time fixed, in which we have nothing to fear from the teething; their nerves are then too ſenſible, and thus are liable to get convulſions at that time, which always make the proſpect dreadful. Nevertheleſs, I know that it has ſucceeded with profeſſor *Schulzenheim*, who has ſeveral times been obliged to do it: Dr. *Maty* recommends it with very good arguments in the *Medical Eſſays*, Vol. III. *p.* 287, and Doctor *Locher* at *Vienna*, in the year 1768 inoculated 34 new-born children, of whom the oldeſt was only ſeven days old; it is rather to be admired that only one died; for both the room and nurſing were bad; the mother of that child who died, had contracted a diarrhœa by walking on a ſtone floor barefooted, and keeping her diſorder ſecret. See *Maxim. Locher's obſervationes, practicæ circa inoculat. variol. in Neonatis inſtit. Vindobonæ*, 1768. Dr. *Dimſdale* excludes only from the inoculation, ſuch as are affected with inflammatory or *exanthematic* fevers, or have evident ſigns of acrid and corroding humours, who pine away, or frequently are troubled with agues. He rather excludes women who are big with child; but he pretends that thoſe who have laboured under any chronical diſtemper, diſpoſition to the king's evil, ſcurvy and gout; or are corpulent and inactive, or have lived immoderately, have been inoculated with the ſame ſucceſs as the moſt healthy and moderate. See his l. c. I would rather cure pimples of the face before I inoculate, which may eaſily be done by a good diet and the above-mentioned pills of calomel, *ſulphur auratum antimonii*, *&c.* and by purges.

Girls who are in the 14th or 15th year ſhould not be inoculated, unleſs they are otherwiſe very well in

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for a fortnight together, by a proper diet, and pills of calomel, *ſulphur auratum antimonii tertiæ precipitationis*, camphire and *gumm. guaiaci*; theſe pills were taken twice a week, and the following day a gentle purge, accommodated to the taſte of each.

reſpect

reſpect to, and juſt after the three firſt days which are uſually troubleſome to their ſex. We ought carefully to avoid inoculating any one who is perhaps infected already, as then the puſtules will break out too ſoon, and if they be malignant, it will be aſcribed to the inoculation; therefore whoever is to be inoculated, ſhould firſt keep within doors for about a fortnight, ſo as to prevent the contagion reaching him; this is eaſily attained by thoſe who have more rooms than one, ſo that the child may ſtay in the inner apartment, where none ſhould be admitted except thoſe who are to attend the child. We find the importance of this from what Dr. *Archer* relates to Doctor *Kirkpatrick*, that among 33 children he intended to inoculate, 11 were infected with a natural ſmall-pox during the time of preparation, by which three of them loſt their lives; ſee his *Analyſis*, *p.* 412. One ought not to admit any one who comes from a place where any other contagion is ſpread, to ſee the patient who is inoculated: it once happened that the hooping cough was conveyed to one of my patients, who had the ſmall-pox; the puſtules were drying when the child got the other diſeaſe, and would have ſuffered much if the ſmall-pox had not been ſo favourable, that ſcarce any thing of its ſtrength was loſt; the child was likewiſe cured of this diſeaſe, but with more difficulty than the former. I was ſo much the more convinced that this had been a true hooping-cough, as beſides the diſeaſe being attended with the ordinary ſymptoms, the child was not infected the following year, tho' it was for three weeks together in company with two other children who had a violent hooping-cough.

Nobody ſhould be inoculated who is not (if it be wanted) well prepared; which is to be done by the above-mentioned preſervative pills *, in the mean time taking

* Or by one or two grains of calomel taken together with a grain of camphire in a wafer towards night, and the next morning a moderate doſe of *electuarium lenitivum*; conſequently we find, according to my own repeated experience and that of many others, the precaution of M. *de Haen*

taking care to avoid exceſs in food and drink, in labour, exerciſe and night-watching, leaving ſtrong nouriſhing food, or that which is ſalt, ſmoaked, ſour, hard, ſeaſoned or rich, eſpecially at ſupper: thoſe who are weak may be allowed to feed better than thoſe in perfect ſtrength; for the body ought to be put in ſuch a condition, that the *variolous* fever does no harm without being ſuffocated, for in that caſe the puſtules cannot break out, riſe, ripen, and dry: for all our intention by the preparation ought to conſiſt in effecting, 1. That the body does not ſuffer by any other diſeaſe than the ſmall-pox. 2. That the blood be neither too rich nor too poor, as the fever in the former caſe may be too violent, and in the latter too ſlight; in which latter caſe, the *variolous* matter might, according to the vulgar expreſſion, lay itſelf on the nerves. 3. To ſoften and relax the ſolid parts in caſe they ſeem too hard, dry, and rigid, and *e contra* to ſtrengthen them if they are too relaxed. 4. To correct a bilious conſtitution, for that is generally attended with a ſevere ſmall-pox: of ſuch a nature was that of the univerſally beloved Count *Giſor*, who was inoculated in the 24th year, but by the means of a good preparation, went through this ſickneſs with eaſe: therefore if a perſon be plethoric, he ſhould be bled the ſame day the inoculation is performed: thoſe who are of a dry and lean conſtitution, ought to bathe in warm water ſeveral times; if they have weak lungs, they ought beſides to drink whey, *(petit lait)* or freſh and ſtrained butter milk; but if they are affected with any other diſeaſe, as looſeneſs, worms, ſcab, boils, miliary fever, or any thing ſimilar, theſe diſeaſes ought to be cured *. Children who generally are

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Haen to be quite unneceſſary. Aſſeſſor and provincial phyſician Dr. *Haſt*, has inoculated 55 children of the common and poorer people, with the greateſt ſucceſs, and without any preparation, as they moſt likely did not want any. See the News-paper from the Provinces, No. 62, of the year 1770.

* Such diſorders ought certainly to be cured beforehand; but ſickly perſons then are not at all to be inoculated? If the

are great eaters, ought to be prevented from gorging too much, neither ought they to be ſuffered to heat themſelves

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the inoculation is a remedy which makes the ſmall-pox leſs dangerous and more favourable, and the ſickly be as much expoſed to the contagion as others, it plainly follows, that the benefit of being inoculated ought not to be denied them: for if they are with difficulty cured of the ſmall-pox when inoculated, they certainly will loſe their lives by it, if gotten by the common contagion, as it is moſt probable that they will have a ſevere kind. In the interim, we ſhould rather chuſe healthy ſubjects to inoculate on till this operation be generally received, and looked upon to be as innocent a remedy as bleeding, or the uſe of mineral water. When from the public it has gained ſuch confidence, we then may go on ſtill further, and uſe this happy remedy for other diſeaſes, which are otherwiſe commonly incurable, as mental diſorders, the hyp, convulſions, epilepſy, paralyſis, *gutta-ſerena*, ſtubborn agues, *&c*, We have now hopes of performing great things by the inoculation, on reading what Dr. *Lobb* relates in his book on the ſmall-pox, Tom. II. hiſt. xlix, of a youth 12 years of age whom he inoculated; and from what is mentioned in the Literary Gottingen Gazette, 1757, *p.* 1300; as alſo from the ſtory of Mr. *Williamſon*, whoſe ſickly conſtitution was ſo far mended by the inoculation, that his friends did not know him. (ſee *Kirkpatrick*, c. i. *p.* 276). Profeſſor *Schulzenheim* inoculated the ſmall-pox on a child which had a weak ſight; but as ſoon as the ſmall-pox was over, its eyes were much better. A noble young lady who was inoculated on the leg by profeſſor *Haartman*, thereby got rid of a running of the eyes of many years ſtanding. Profeſſor *Schulzenheim* and *Bergius*, have experienced the ſame by inoculating on the arm. I will here likewiſe mention a remarkable cure performed by profeſſor *Muzel* in *Berlin*, 1754: he received into the hoſpital a man about 28 years old, who through grief for the impious conduct of his ſiſters, had ruined himſelf ſo far that he had only the reſemblance of a man; he gave not the leaſt ſign of ſenſe or feeling, was lean and pale, and had a weak and ſlow pulſe: he was retained in the hoſpital for two years, and all poſſible means were thought on and tried to relieve him; as nothing ſucceeded, he was inoculated with a ſcab, which the following day cauſed a violent fever, with ſuch a ſalutary effect,

themſelves by too much playing; they ought eſpecially to be prevented from ſuch plays by which they may hurt themſelves, (ſee the *Acta* of *Zurich*, Vol. III. *p.* 68): girls ought at that time to pull off their ſtays; thoſe of a bilious conſtitution, ought to drink freely, and to take one or the other emetic, abſtaining from all milk and fat food: they ſhould mix in their ſoups and ſtews of herbs, a little juice of lemons or good vinegar: thoſe who cannot take the pills may be prepared with the tar-water during three or four weeks beforehand, and take a gentle purge every fourth day of the *electuarium lenitivum*, or ſomething ſimilar, according to the conſtitution and age of the perſon: thoſe who cannot bear the tar-water, may content themſelves by keeping a good diet, and ſometimes purging, However, I have the greateſt confidence in quickſilver, eſpecially as I cannot find but that it otherwiſe diminiſhes the diſpoſition in the body of receiving and nouriſhing the *variolous* matter, or elſe how would the method of Baron *Dimſdale* ſucceed ſo well as it does? I conceived that opinion in 1744, when Mr. *V. G.* was affected with a confluent ſmall-pox, and I wiſhed to ſecure his two brothers from ſo malignant a kind, which likewiſe ſucceeded, by the uſe of the above-mentioned pills: one of theſe two continuing the uſe of them likewiſe after the fever had began, without my knowledge, he got a ſlight eruption on the 3d day, which on the 4th diſappeared, together with the fever: he continued however very well, and got the *variolous* fever a fortnight afterwards, and only five puſtules. Dr. *Watſon* in *London*, tried to find out the difference between inoculating with and without preparation, in the following method; he inoculated eight children after the new method, one half of which were boys and the other half girls, from ſix to twelve years of age, they being prepared by a couple of purges of 10 grains of jalap and four grains of calomel; the puſtules counted together made, at a medium, 14 for

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effect, that the patient quite regained his underſtanding on the 9th day, and was able to leave the hoſpital after three weeks, perfectly reſtored to his health.

each

each boy, and five for each of the girls: four other boys and as many girls were likewiſe inoculated; after being prepared with a laxative of *infuſum ſennæ*, and the *ſyrupus roſarum*, the number of puſtules counted at a medium, were about eight for each child: but of 11 who were inoculated without being prepared by any purge, the medium taken of the number of puſtules amounted to 32 for each; all theſe were nurſed alike: now if the danger of the ſmall-pox depends on the number of puſtules, every one may from this eaſily judge of the utility of purges during the preparation alſo in younger children. See *Archiater Bæck's* preface to Dr. *Dimſdale*'s book on the inoculation of the ſmall-pox, *p.* xv *.

As a proper drink during the preparation, we may uſe water mixed with milk, good ſmall beer, or a ptiſan of *radix chinæ*. Mr. *Tiſſot* recommends very much whey or *petit lait*, and that with good reaſon: as a proper food, we may preſcribe diſhes prepared of milk, gruels, groats, bread and ſoups; frying fiſh, haſhes of fiſh, or fiſh ſtewed with raſped bread, or with the leaves or the roots of parſley, however this ought to be done with but very little butter; ſpinage ſtewed with ſoup for dinner, and without ſoup for ſupper; ſpinage or other greens ſtewed with freſh cream is good, but ought to be leſs frequently uſed: a child may eat puddings of bread, or ſpinage, ſome ſorts of cakes and wafers, but no pancakes, or ſuch as are fat. Thoſe who appear tender and are weak, may be allowed to eat veal and chicken broaths, and haſh meat: thoſe who are not troubled with a looſeneſs, ought frequently to eat diſhes of herbs, and ſtews of apples and plumbs, for they ought to have ſtools every day: the poorer people who cannot afford ſuch a variety, may content themſelves with milk barley-ſoups, groats, ale-ſoups, milk-whey made of ſmall beer and the like: we may eat the dinner in a due quantity, but ſupper ought to be reduced, as otherwiſe the food will not be digeſted, and the ſleep will be uneaſy.

There is however no poſſibility to give any general rule for the preparation, as different conſtitutions of

* The *Swediſh* Tranſlation.

bodies, will require different preparations. A tender and weak child, who is often plagued with acidity in the ſtomach, vomitings or too great a looſeneſs, or who has ſome ſigns of the rickets, wants a longer preparation, than one who has a good appetite and is of a healthy and jolly appearance; this latter needs only to be reduced to a leſs quantity of food, and to drink whey. Children are well prepared when they are hungry at the cuſtomary times, ſleepy and awake at the uſual hours; when they have a due number of ſtools, the lower part of the belly ſoft, and the breath ſweet; when they are in good ſpirits, and feel themſelves active and light. If at the ſame time it happens, that the air is not too hot, too cold, or too moiſt; if no other contagion is raging which likewiſe attacks children, and the perſon to be inoculated does not fear it; then we have the greateſt reaſon to expect good ſucceſs.

The matter for inoculation may be taken from the wound after the inciſion, either by the point of a lancet or by a cotton thread. The confirmations of *Sutton*, *Watſon*, *Dimſdale* and others, ſhew that we need not wait till it becomes yellow or ripe; they pretend likewiſe, that the unripe matter will cauſe a leſs number of puſtules when their new method is uſed, and that very little of it is required to propagate it: however Dr. *Dimſdale* ſeldom depends upon a ſingle inciſion, but makes another in order to make himſelf the more ſure that the contagion ſhall take: he likewiſe collects the matter for inoculation during the eruptive fever, in expectation that it is then more effective. When he collects this matter from an inoculated perſon, it is taken from the wound of inciſion, being very well convinced that the matter taken from thence is powerful enough to infect, in caſe the contagion has taken in that wound: the freſher the matter is, ſo much the better it will be: there is ſometimes ſcarce any *variolous* matter to be got in the ſmaller towns and in the country; therefore it is neceſſary to preſerve ſome dry threads for inoculation in a phial to uſe occaſionally, by which we can ſoon get a freſh contagion; we cannot exactly fix how long a time it will preſerve its power to infect; but Mr. *Tiſſot* has inoculated with ſuch a thread 26 months old, and *Kirkpatrick* with one, which was preſerved five

years

years and 11 months: we may likewiſe keep ſome cruſts of the ſmall-pox for the ſame purpoſe, as is practiſed by Aſſeſſor *Haſt*.

The beſt time for inoculation is when the perſon to be inoculated is under ſuch circumſtances as are above enumerated as favourable, either during the ſpring, ſummer, harveſt, or winter; becauſe it is now performed in all ſeaſons, and with equal ſucceſs: the inoculation is performed in *Conſtantinople* during the winter only, as either the plague or the peſtilential diſorders commonly rage during the other ſeaſons of the year. We ought however to defer the inoculation if any other epidemical diſtemper rages; this is likewiſe agreeable to the opinion of Baron *Dimſdale*. The late profeſſor *Monro* relates, that a certain phyſician, during the time he viſited many patients in the miliary fever, inoculated the ſmall-pox on his own ſon: he was affected with the miliary fever upon the eighth day; but this was ſoon cured; after that the ſmall-pox broke out, and was likewiſe favourable: ſeveral others were inoculated by the *variolus pus* taken from this patient, and all of them were affected with the miliary fever together with the ſmall-pox: the event was ſucceſsful, nevertheleſs I think it imprudent. *Vide Journal des Sçavans*, 1766, for *Jan. p.* 227.

The patient ought to take a gentle purge the day after the inoculation; he may likewiſe then begin to bathe his feet every night in warm water. I make the inciſion on the arm juſt at the place where iſſues are commonly made; we may inoculate on both arms, in order to be certain of the infection ſucceeding: I rather chooſe the arm than the leg for this purpoſe, in order that the patient may be able to walk during the diſeaſe. We may make a ſcratch of the length of about half an inch, between the upper and inner ſkin, obliquely with a lancet, ſo that ſcarce any blood comes out; in this wound we put the thread for inoculation, not covering it with any plaiſter (unleſs perhaps the firſt day), but only with a bandage to prevent the thread from falling out; a little cotton ſhould be put between the wound and the bandage, as they otherwiſe might ſtick together; digeſtive unguents are unneceſſary.

Children are generally frightened at the inciſion, eſpecially if it is to be done in more than one place; therefore I think it much more proper to uſe a veſicatory inſtead of it, which is oblong and but very ſmall*; we apply it in the evening, and take it off again the following morning, together with the thin elevated ſkin, drying the place with ſoft linen; after that the thread for inoculation is to be put in it, which we ſecure by means of a little cotton and a bandage: if after one or two days there is no redneſs found on the edges, we may put another thread in, and if it be wanted likewiſe the third and following days: I have as yet never found this to be attended with the leaſt inconvenience as M. *de Foigny* pretends. We may eaſily follow the advice of profeſſor *Schulzenheim*, and apply three different threads at once, which certainly will make the infection ſucceed; four perſons of our royal family here, were in this manner inoculated. Baron *Dimſdale* admits the perſon going to be inoculated, into the ſame room where a patient lies affected with the ſmall-pox, and fetches ſome *variolous* matter with the point of his lancet, either from the wound of inoculation or (in a natural ſmall-pox) from a puſtule, ſo that both ſides of the lancet are wet; with this he makes a little opening on the arm, and no deeper than that it pierces through the exterior ſkin, and only touches the interior; and with reſpect to its length, as ſhort as poſſible, and no more than the eighth part of an inch; he extends this ſmall aperture by the thumb and his fore-finger, ſtriking gently over the wound with the flat ſide of the lancet: the wound is in this manner moiſtened by the infection (ſee c. i. *p.* 16). I think it would be ſafer not to admit the perſon going to be inoculated into the ſame room, tho' he may come into the ſame houſe where any one is affected with the ſmall-pox. Profeſſor *Schulzenheim* and Dr. *Ahman*,

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* Aſſeſſor *Haſt* looks upon this likewiſe as the beſt and ſureſt way. He puts in it a couple of ſcales of the ſmall-pox, which he endeavours to cover with the thin elevated ſkin *(epidermis)*. See the reports of the phyſicians to the provinces, to the *Collegium Medicum*, 1769, *p.* 543.

who

who ſometimes have inoculated in the manner of Baron *Dimſdale*, always made the inciſion in the next room to that of the patient, which was attended with ſucceſs: what is to be further obſerved in reſpect to this new method, may be ſeen in Dr. *Dimſdale*'s book, and in the preface which *Archiater Bœck* has written to it in the *Swediſh* tranſlation. Laſt ſpring I inoculated three children in the country, two of them in the manner above deſcribed, and the third after the method of Dr. *Dimſdale*, only with this difference that I uſed a veſicatory and thread inſtead of a lancet: the inoculation did not ſucceed in one of them, notwithſtanding I applied new threads; its mother recollected afterwards that it had had the ſmall-pox before; the other got a favourable ſmall-pox, but was ſo peeviſh that I could ſcarce prevail on it to ſit up at all, much leſs to walk out in the open air; the third had the diſeaſe in a very eaſy and gentle degree, was chearful, and walked out in the cold air, whenever it found itſelf any thing indiſpoſed, and was thereby again refreſhed, and did not want any other remedy. Aſſeſſor *Haſt* has often inoculated after the method of Baron *Dimſdale*, and recommends it much; he likewiſe obſerves, that the common people have become more inclined to receive the inoculation for their children ſince he began with this method, as they then want leſs nurſing and attendance, and are left to their uſual liberty, which makes them more chearful and happy. See the narrative of the Prov. Phyſ. to *Coll. Med.* c. i. *p.* 467 *.

* I have thought it ſafer, that the perſon on which I inoculated ſhould keep a handkerchief on his mouth and noſe, in order to prevent the ſteems or exhalations from the *variolous* matter to infect by that way, and cauſe a natural ſmall-pox. This I find diſpleaſes Doctor *Fr. Caſimir Medicus*, in his obſervations, Vol. II. *p.* 771. I have likewiſe been of opinion that a phyſician, who has ſeveral patients affected with the ſmall-pox to viſit, ought to change his cloaths intirely before he goes to ſee a perſon lately inoculated: and that the inoculated one ſhould not ſee or come near any one who late has had the ſmall-pox, unleſs we, by certain ſigns in the inciſion, judge that the inoculation has ſucceeded;

Thoſe who think it more convenient for the dreſſing of the inciſed wound, may, during that time, have a jacket on, with the ſleeves ſlit, and tied at the edges, in that part which anſwers to the inciſed wound.

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ceeded; for it is likewiſe a neceſſary precaution to avoid the natural infection. Nay, I have not allowed a perſon lately inoculated to receive letters from a place where the ſmall-pox rages, as I know the contagion has been conveyed in this manner from *Upſal* to a pariſh in *Nerke*, about 100 Engliſh miles diſtant from each other. In conſequence of this, I think Mr. *Sutton* and Dr. *Dimſdale* venture too much in this reſpect, tho' I ought not to expreſs myſelf ſo of theſe gentlemen, who have had in this, greater experience than any other perſons. However I cannot reconcile this with what Dr. *Dimſdale* ſays (*p.* 81, *Swediſh* edition), that he indulged an inoculated perſon to undertake a voyage, but adviſed him not to enter into any company where he might ſpread the contagion by his breath, which had then the ſtench with which this diſeaſe is uſually attended (*p.* 29, 31. *ibidem*); it may be, that the running matter which is taken from the inciſion wound before the eruption does not ſmell; but it is very certain that ripe matter has a ſmell, which therefore might poſſibly infect notwithſtanding the quickneſs of inoculation; therefore thoſe who have not injured their organs of ſmelling by ſnuff, are able to feel and foretell the day when the ſmall-pox will ripen: as alſo to know, by the breath of the patient, if the inoculation has taken effect or not. For the ſame reaſon it is a common opinion, that a perſon who has not had the ſmall-pox runs a greater riſk of being infected, if he viſits a patient whoſe ſmall-pox are ripening. Therefore it was ſaid, that her Royal Highneſs the Princeſs *Hedviga Sophia* received the contagion at a viſit, where ſhe happened to go through an apartment, cloſe to which a patient was affected with the ſmall-pox; her Royal Highneſs, who knew nothing of this, felt however the ſmell, and immediately put her handkerchief to her mouth and noſe; but the infection had already taken, ſhe got the ſmall-pox, and died 1708. However it may be poſſible that the infection of the *variolous pus* is not volatile, as we find that a cruſt of the ſmall-pox, or a dry thread for inoculation, likewiſe conveys the contagion by inoculating; and in that caſe we ſhould receive the infection only by contact, as in the ſcab and the venereal diſeaſe.

To

To have always a plaiſter on it occaſions a confuſion, ſo that one cannot tell how the inoculated matter operates; the firſt day after the inciſion, no alteration is to be found in it, but on the following days the ſkin at the edges of it begins to appear as it were contracted, grows red, and itches. On the fourth and fifth day a hardneſs will be perceived in it, and the inoculated perſon feels a tenderneſs in the armpit, a heavineſs and pain in the ſhoulder, and a pale ſtroke, mark or ſcratch is to be ſeen in the wound; ſmall bladders will likewiſe break out all around it, ſometimes in great numbers, and the red ſpot grows larger; on the 5th, 6th, 7th, or 8th day (for it happens differently) the inoculated perſon begins to be indiſpoſed, is uneaſy, affected with ſlight *ſpaſms*, a redneſs in the face, a heavineſs in the forehead, a pain in the head and back, a *nauſea* and a diſpoſition to vomit. The fever begins, continues for three days, and is moſt ſevere at the end of the third: the ſcratch is now dry, and the cruſt looks dark and of a lead colour, the redneſs about it is now likewiſe ſpread further*. The fever is generally ſo gentle that the patient can walk about: I commonly order at this time a piece of linen, previouſly well rubbed with camphire, to be faſtened to the nightcap, in order to preſerve the eyes, by hanging down over them. On the 10th or 11th day after inoculation, or the third from the beginning of the fever, the puſtules begin to break out by degrees, and at their eruption both the fever and other ſymptoms ceaſe: the patient is then free from all danger, the inciſed wound begins now to diſcharge a great deal of matter, and moſt of all when the puſtules begin to dry; for they grow by degrees, become yellow, ripen and ſcale off, ſo that all is over by the 18th or 19th day, and

* One muſt not be too forward in judging by one or the other of theſe ſigns only, that the inoculation has ſucceeded; in this point Profeſſor *Gatti* was miſtaken, who concluded from the redneſs and ſuppuration in the wound only, that the Dutcheſs *de Boufflers* would for the future be ſecured againſt the *variolous* contagion. She got a natural ſmall-pox two years and a half after that.

the patient has ſeldom a ſingle ſcar left after it; rarely any ſuppurative fever appears at all, unleſs the puſtules are in a greater number; in that caſe it may eaſily be ſubdued by a gentle purge.

The patient ought to keep the ſame diet as is above preſcribed *, and wants no other medicines than gentle purges, in caſe he ſhould not have any ſtools by the effect of nature; he may likewiſe walk about in the room, but muſt take care not to uſe too great exerciſe, eſpecially not to move the arm much on which the inciſion is made, or to ſqueeze it much by a tight dreſs, for that will cauſe the arm to ſwell, grow red and full of bladders: ſuch an accident may however eaſily be remedied by a purge, and by applications of an unguent of litharge mixed with *flores Zinci*.

The inciſion does not heal up ſo very ſoon, for in the ſame proportion as the puſtules ripen, this wound grows dilated; it is however ſeldom longer than the inciſion was made at firſt, but ſometimes ſhorter; it likewiſe diſcharges at that time a great deal of matter, which has the ſame appearance as the *pus* in the puſtules; therefore we leave it to run as long as it chuſes of its own accord, and dreſs it with dry lint when the diſcharge or the ſwelling is too great; it remains open in ſome for a couple of weeks, in others it is cured ſooner.

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* By the narratives directed to *Colleg. Med.* we find that an alteration in the diet may be attended with bad conſequences (ſee *p.* 14, for the year 1765). Profeſſor *Bergius* inoculated two children of a gentleman, and their ſervant girl at the ſame time; the former had a favourable ſmall-pox, but the ſervant girl got a very ſevere kind. She confeſſed her having eaten ſtily ſalt herrings, pork, and ſuch other things, both before and after the inoculation. *P.* 255, in the ſame narrative, is mentioned by Profeſſor *Acrell*, with what difficulty a noble young lady was recovered, after having eaten ſpinage ſtewed in a copper veſſel which was not well tinned. The cauſe would not have been diſcovered, had it not been for her governeſs and ſervant woman being ſick from the ſame circumſtance, and as the ſame time.

In

In caſe the inoculation does not ſucceed, but the ſcratch heals quite up without being open again in ſix days, it ſhews that the patient has either had the ſmall-pox or never will have this diſeaſe, or that the thread for this inoculation has been too old or worn off, or the variolous matter waſhed off by the blood. In that caſe we ought to inoculate him again, in order that he may not in the mean time receive the natural infection. It is attended with no danger to do this immediately, though ſome wait till twelve days are paſt.

We need not be alarmed though the inoculated perſon ſhould not fall ſick at the uſual time. Profeſſor *Swencke* inoculated a youth thirteen years of age, who was an only ſon. On the fourth day he felt as it were a trembling in the left arm, for the inciſion was performed in that arm only. A cruſt already covered the wound; on the ſixth day he felt a ſmart pain in the arm and in the armpit; the fever began on the eighth day, which increaſed the ninth, with a head-ach and a pain in the back, and reachings and ſweat. Theſe ſymptoms were only of a few moments duration. On the tenth day he had a ſlight bleeding of the noſe; no ſmall-pox as yet appeared. His father grew uneaſy. Dr. *Swencke* found at laſt on the twelfth day, and after having wiped off the *pus*, five true pocks near the wound and on the edges of it. He nevertheleſs applied a new variolous matter into the wound the ſame night. The next morning the patient had in the face, loins, and on one of the knees, in all four pocks more, which together with the former, roſe, ripened, and ſcaled off. The inoculated wound diſcharged a great deal of matter for twenty-four days; and the cure was entirely performed. Here we plainly find that the variolous matter which was applied laſt, did not cauſe any effect at all, for in that caſe a new fever would have enſued on the ſeventh day, and a new eruption afterwards, which however did not happen. Beſides, we perceive that the fever which ariſes from the inoculation does not always happen at the ſame time. Four children at *Stockholm* were inoculated at the ſame hour and with the ſame matter; nevertheleſs one of theſe had the fever two days later than the others. The ſmall-pox did not break out ſooner than after a fortnight on the

daughter of Lord *Dalkeith*, and not till after twenty-ſix days on a foundling; but ſuch inſtances are rare. This laſt had already been infected with the meaſles. It was neverthleſs ſucceſsfully cured of both theſe diſeaſes, firſt of the meaſles, and then of the ſmall-pox. On Miſs *De Grave* the variolous fever, after the innoculation, did not appear ſooner than after eleven weeks, but ſhe was during that time not very healthy. See ſeveral ſuch inſtances in *Kirkpatrick*, ch. i. *p.* 102. It is however better when all happens tolerably early.

Nobody ought to be allowed to wait on the inoculated who is not quite certain they have had the ſmall-pox. Lady *Criſeney* nurſed her own children when they were inoculated, as ſhe thought ſhe had had the ſmall-pox before; but ſhe got infected and died. The ſame fate attend Lady *Vierville*, who viſited the Ducheſs of *Orleans*, when the young princeſs had the ſmall-pox by inoculation. See *de Foigny*, ch. i.

If the bleeding be neglected in a plethoric perſon, he will be liable to red eyes, and a kind of ſcarlet eruption, reſembling that of the *eryſipelas*. A great number of puſtules are ſometimes obſerved as it were breaking out, but the greateſt part is dried away within a ſhort time, and only a few ripen and ſtand their time. Fat children do not get a greater number of pocks than thoſe who are lean; but thoſe who have a brown complexion are ſaid to be liable to have more than thoſe who are fair.

With reſpect to the fever, ſeldom any thing will be required but tea and whey. In caſe the fever ſhould be ſevere, we may bleed the patient, and inject a clyſter. In caſe we chuſe to get any thing from the ſhop, we may preſcribe a cooling *emulſion* with a little *nitre* in it, and give a tea-cup-full of it every two hours. However, we ought to prepare and get only a little at once of this, for it acquires the ſmell of *aqua fortis* by being kept ſome time. The cooling draughts which are recommended in the *Chapter on Ague* are alſo good, or the patient may drink cold water and ſit up. But the beſt of all is found now to be a purge which is quick in its operation, (as was recommended in the chapter on the ſmall-pox): this we

ought to give on the ſecond or third febrile day. The violence of the fever will abate as ſoon as the patient has had ſome ſtools by it; and the eruption ſucceeds, but frequently ſo gentle and ſlight, that the patient doubts himſelf of its being the ſmall-pox. Nevertheleſs he is ſecure from this diſeaſe for the future, for when ſuch have been inoculated a ſecond time, the contagion has not ſucceeded. *Aſſeſſor Bierthen* inoculated a young gentleman who was twelve years old, and of a plethoric and reddiſh complexion, and a bad temper. He fell ſick the uſual time, but the fever was very violent, his face of a blood-red colour, and ſo profound a drowſineſs attended it, that it nearly reſembled a lethargy; one was obliged to take him by force out of bed and put his cloaths on, and lead him along in the chamber: cooling remedies and clyſters were adminiſtred; the fever continued with equal violence; but after having taken of the before mentioned powder of *Cremor Tartari*, and *Jalap Root*, and it having procured ſome ſtools, the patient was quite relieved, in ſuch a manner as if he had not been ſick at all. The eruption was ſo inſignificant and ſlight, that the Doctor apprehended the patient liable to a new contagion, therefore he inoculated him again after two months with entirely freſh *pus*, and according to the method of Dr. *Dimſdale*, but the infection did not ſucceed.

If the inoculated perſon gets a ſhooting pain under his breaſt, has a head-ach, red cheeks, and a tickling in the noſe, it ſhews that he will be affected with a *hæmorrhage* at the noſe, which ought not to be ſtopped, unleſs we plainly perceive it to be too violent, ſo that it would weaken him. In that caſe we muſt apply a piece of linen in the noſe made up in a little roll, on which has been ſpread a mixture of alum and the white of an egg rubbed together. A clyſter injected will alone gently relieve, as the patient who bleeds is commonly coſtive.

The vomiting ought to be ſtopped in caſe it is too violent. This may be effected by a clyſter of the common ſort, or by ſome ſmall bags filled with *mint* and ſome *ſaffron*, and applied to the ſtomach, after having been boiled in wine, and ſqueezed out; or we may drink ſome warm water: the vomiting will ceaſe

of

of its own accord as ſoon as the puſtules are quite broke out. When children fall aſleep during the fever they commonly dream much, and awake in an alarm and a fright, eſpecially if they do not ſee the perſon who ſat at their bed-ſide when they fell aſleep; their fright and alarms are baniſhed as ſoon as we ſpeak to them.

A delirium portends no harm, it goes off ſoon by a bleeding at the noſe, a powder of *camphire*, or a clyſter. The under lip trembling, ſhews that a puke-ing or a *nauſea* will come on.

If the child has been before affected with convulſions, or the dentition happens at the time of inoculation, it will eaſily get convulſions again, either the firſt night of the fever, or rather a little before the eruption. This denotes in general a favourable ſmall-pox, is productive of no harm, and may be relieved by a clyſter; a *camphire* powder will be ſeldom wanted; or one or two grains of *muſk* rubbed with ten grains of ſugar, and given as ſoon as the patient can ſwallow *. If the patient be uneaſy, reſtleſs, toſſing and agitating his body much, we may give him a little *ſyrup of poppies* towards night, or ſome of the *elixir paregoricum* well mixed with ſome ſyrup, eſpecially that which is made from the *Norlandic berries*.

If the child be weak, and the puſtules will not turn yellow and ripen well, we may give ſome bark every third or fourth hour, agreeable to the advice given in the chapter on the Small-Pox and Ague.

When the ſmall-pox is dried up and ſcaled off, the patient ought to take gentle purges ſix or ſeven times every third or fourth day. He ought likewiſe to abſtain from much nouriſhing food, as he otherwiſe might eaſily contract an eruption on the arms and legs, breaſt and back, which itches, and on being ſcratched,

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* When Doctor *Ingenhouſz* was in Vienna, it happened that a child he had inoculated had the convulſions. He haſtened to open the window, and held the child out of it; the convulſions ceaſed inſtantly. This caſe I got by a letter from Vienna, from a perſon whom I can depend upon.

diſcharges

diſcharges an acrid lymph. It would be of ſervice to let children afterwards drink a ptiſan of *radix Chinæ*, mixed with a little milk, and continue it a fortnight. Older perſons ought to drink a decoction of *guaiac*, likewiſe diluted with milk *.

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* I ought to anſwer a great objection made againſt the inoculation of the ſmall-pox, before I finiſh the treatiſe on it. Some have pretended that the contagion is conveyed to other families either by the perſons inoculated, by the phyſicians, or by thoſe who attend upon the inoculated; and conſequently thereby occaſion the ſmall-pox to rage more frequently in a place than it otherwiſe would. This argument will ſoon drop, if we conſider that the ſpreading accounts of it have been falſe. The contagion in the year 1722, and in the months of *April* and *May*, did certainly not ariſe from the inoculation, as that was firſt performed in the month of *Auguſt*. The contagion at *Paris* 1762, was not raiſed by inoculation, for this operation was firſt made there in the year 1763. See *De Foigny*, ch. i. It is not found that any contagion has been conveyed from the hoſpitals of inoculation in *London* or *Stockholm*. Nor have we any inſtance of that kind from any of the other parts of *Sweden*, where a great number have been inoculated; neither from *England*, where the inoculation has been performed on ſeveral perſons, in theſe latter years. For, during the diſeaſe, nobody is admitted into the patient's chamber who has not had the ſmall-pox before. We now act more cautiouſly than they formerly did in *England*, when the inoculation was at firſt introduced. Six ſervant maids were there admitted to Mr. *Batt's* children, careſſing them frequently during the courſe of the diſeaſe; all ſix were infected and one of them died. See *Kirkpatrick*, *p.* 119. As ſoon as the diſeaſe is over, the room and clothes of the ſick are waſhed and aired, the doors and windows kept open, and the ſcales of the puſtules are burnt. It has never been heard of that any one has caught the contagion in the open air. The pocks after inoculation are always leſs in number, conſequently they exhale leſs contagious vapours. As to the phyſicians who viſit the inoculated, every one ought reaſonably to have more honour and conſcience than to ſpread the infection, they being bound both by the nature of their office and their oath, to preſerve and not to injure mankind. If they, during

The contagion of the ſmall-pox may likewiſe be propagated by applying on any part of the body, either the variolous *pus* only, or ſome dry cruſts of the ſmall-pox; they ſhould be put next to the ſkin, and covered with a plaiſter, in order that the variolous matter may not go off by exhalations, but be conſtrained as it were to enter into the body through the pores. In order the better to rub in the matter, we ſhould mix it with ſome pomatum or unguent, taking care not to mix *camphire* in the ointment, as that would deſtroy its power of infection. This kind of inoculation has likewiſe been ſucceſsfully employed both in *England* and *Leipzig*. The following *caſes* happened in *England*: A man had a very handſome daughter ten years old, whom he loved tenderly; he took ſome variolous *pus*, mixed it with pomatum, and ſpread it on the inſide of his daughter's gloves, on the places which correſpond with the interſtices betwixt the thumb and

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ing the time, viſit other families beſides thoſe inoculated, they never ſhould neglect to ſhift their cloaths entirely, nothing elſe will be required. His Royal Majeſty, our moſt gracious Sovereign, has likewiſe this confidence in the phyſicians in Sweden, for which reaſon he has been pleaſed to order that all inoculations ſhould be made under the inſpection of a doctor of phyſic. The nurſekeeper, or the attendant on the ſick, ought likewiſe to waſh and air his cloaths before he leaves the houſe where he has been attending. When ſuch precautions are taken, we may be pretty certain that the contagion from the inoculated perſon can never be conveyed from one houſe or place to another. But if imprudent and daring youths ſhould ſuffer themſelves to be inoculated, and then walk about in churches, companies, ſee plays, &c. and brag that they have been inoculated, they would ſtrike a dreadful terror, eſpecially in thoſe who have not yet had the ſmall-pox; ſuch abuſes would make inoculation prejudicial, in caſe there were not means to prevent them. Every one has a right to uſe a remedy by which he may preſerve his life, provided it does not endanger that of his neighbour. Letters from *Paris* hint that ſomething of that kind happened there, which obliged the Parliament to aſk the opinion of the *Sorbonne* and the faculty, whether the inoculation of the ſmall-pox ought to be allowed or not.

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the fore-finger, and betwixt that and the middle one. She had a gentle fever on the eighth day, and the puſtules broke out on the eleventh, being very gentle, and leaving ſcarcely a ſcar. In the tranſactions of the Royal Academy of Sciences for the year 1756, Profeſſor *Bergius* relates the following caſe: A child who had a lethiferous ſmall-pox was ſuckled by its mother during the diſeaſe, but on her breaſt only. The mother was thereby at laſt infected, but her diſeaſe was benign, the puſtules being crowded around her left nipple only; ſome few broke out in the face, but only a ſingle one on her body. The infection has likewiſe been caught by touching with the hand, or on feeling any one ſick of the ſmall-pox.

It is either by the one or other of theſe inſtances that the variolous contagion is conveyed from one to another; as nobody ever gets the ſmall-pox but by infection, every one will find that thoſe are moſt fortunate who catch it when the body is well prepared beforehand.

CHAP. XIV.

On MEASLES.

THE meaſles are commonly ſo gentle a diſeaſe, that few children die of it if they otherwiſe have a good nurſing, and no diſorder of the breaſt previous to it. Neverthleſs there are inſtances of its having raged with ſuch violence that almoſt every individual affected by it loſt their lives. This is the reaſon of the ancients having called it *Morbilli* in Latin, or the little Plague. I imagine the meaſles to have been of the ſame bad kind, which carried off ſo many children at *Stockholm* in the year 1713. A ſimilar, if not a worſe kind raged at *Vienna* in the year 1732, when the greateſt part of the perſons affected had a gangrene in the throat, and died on the third or fourth day. Alſo this ſort of epidemical diſeaſe, which was ſpread in *London* in the year 1762, in the autumn, muſt have been very lethiferous, as about three hundred perſons died of it weekly. The meaſles

meaſles at *Edinburgh*, in the year 1758, were looked upon as a gentle kind; nevertheleſs every twelfth of thoſe patients affected by it loſt their lives.

This diſeaſe is generally of an epidemical kind, ſpreading its contagion, and being propagated in the ſame manner as the ſmall-pox; conſequently it muſt have a particular *miaſma* or poiſon which does not dwell in the air, nor is conveyed by that element, but circulates with men and baggage from place to place; therefore it is as poſſible to avoid the meaſles as the ſmall-pox, provided we ſhun the infection. The *miaſma* of either of theſe diſeaſes does not dwell in the maſs of our blood, but there is only a diſpoſition to ſuch exanthematic fevers which never ariſe of their own accord, but when the infection is carried into contact with any perſon. There is no probability of any one having been affected with the true meaſles more than once, provided the diſeaſe has had its perfect run, and has been thoroughly cured, ſo that no ſwelled glands be left which might contain ſome *miaſma* of the diſeaſe, and cauſe a new eruption. Such an inſtance is related by Dr. *Home* in his Medical Facts and Experiements, *p.* 280. I find likewiſe ſeveral phyſicians to pretend that one can have the meaſles ſeveral times; Profeſſor *Hartman* in *Abo* likewiſe inſiſts on the ſame; (ſee Narrative to *Collegium Medicum*, 1765.) But during a practice of forty-four years, I never met with a ſingle inſtance.

Nobody is exempt from the infection of this diſeaſe, as far as we know, of whatſoever ſex or age. In places where the contagion is ſeldom conveyed, many may avoid it by dying of ſome other malady in the mean time. Perhaps the ſame proportion takes place in reſpect to the meaſles as we obſerved of the ſmall-pox, that the infection does not take on four or five among every hundred. But this cannot be ſettled with any certainty before it comes in uſe to inoculate the meaſles, as is done in the ſmall-pox. Journals then properly kept may decide this queſtion.

The meaſles affect children eſpecially, but old people receive the contagion likewiſe, as a great many inſtances prove. Caſes are likewiſe related by phyſicians, of children being brought into the world with this diſeaſe; conſequently it does not ariſe from fear. When the

meaſles

meaſles once are ſpread in a place, they will continue as long as there remain ſubjects capable of the infection, as not yet having had it; or till they, dreading the diſeaſe, avoid all communications with the ſick. This latter precaution ought always to be obſerved when the meaſles are of a malignant kind. It is a general received opinion, that a perſon who has had the ſmall-pox will not ſpread the contagion ſix weeks after the cure, provided he has ſhifted his cloaths. Thoſe who are cured of the meaſles need not keep ſo long a quarantine, as the thread for inoculation of the meaſles does not by far ſo long preſerve its power of infecting as that for inoculating the ſmall-pox.

We ſuſpect a perſon to have catched the meaſles if we know that he has not yet had this diſeaſe, and that it is now ſpread in the place where he now lives, or ſomewhere in the neighbourhood, from whence the infection might probably have been conveyed to him by either man or baggage. Theſe apprehenſions are well founded, and liable to no miſtake, if we find that the patient is beſides affected with a dry cough, frequent ſneezing, and a diſtilling of a ſerous humour from his eyes and noſe, and complains of its being hot, and his body feveriſh at the ſame time.

Theſe ſymptoms appear in all kinds of meaſles; but in other reſpects this diſeaſe, as a contagion, varies frequently very much. However it commonly begins with more or leſs chilneſs and heat, which the firſt day ſucceed one another by turns, but the following days the heat is predominant. A dry cough, running eyes and ſneezing, are ſymptoms common to all; but if the cough is very violent, the eyes will diſtill leſs, and the ſneezing comes on leſs frequent, and *è contra*. Beſides, the face appears to be a little puffed up, and the eye-lids ſwell ſomething, and in opening them it is done with difficulty: the eyes themſelves grow red, and cannot bear the day or candle light. The patients complain of a weakneſs, a heavineſs of the head and breaſt, of a pain in the throat and acroſs the loins. They are affected with reachings and a diſguſt for food, thirſt, white tongue, cholic, looſeneſs, delirium, and bleeding of the noſe, but ſeldom convulſions. Theſe ſymptoms are in ſome perſons attended with a great

diſpoſition to ſleep, and a continual as well as pretty violent fever. Towards, or on the fourth day, red ſpots break out in the face, they are ſmall, but collected or running together in bunches *. On the firſt day we find them to be a little elevated above the ſkin in the face, but on the others they ſtand equal with the ſurface, and are now broad red ſpots, not round, but of various ſhapes, both oblong, triangular, quadrangular and polygons. Theſe increaſe by degrees as well in their number as ſize, and likewiſe break out gradually on the neck, breaſt, arms, back, belly, thighs and legs, but in theſe places they only appear as flat red ſpots even immediately after their breaking out.

Theſe above-mentioned ſymptoms do not decreaſe or vaniſh when the eruption is performed, as is the caſe in the ſmall-pox †. The puking is the only ſymptom which in ſome perſons ceaſes. The reſt rather increaſe, eſpecially the fever, the heavineſs acroſs the breaſt, the difficulty of breathing, the cough, the weakneſs of the eyes and their running, as alſo the ſleepineſs and diſguſt for food. On the ſixth or ſeventh day the ſkin in the face and forehead is a little rough or ſharp to the touch; the ſpots on it decreaſe and dry away, but they are then broadeſt and at the height of their redneſs on the other part of the body.

On the eighth day there is ſcarce any ſpot to be ſeen on the whole body; on the ninth they are quite gone, and in the places where they have been, the thin ſkin (*epidermis*) is found fallen off like ſcales, or as if a fine meal or flour was ſtrewed on the body. Now we commonly think that the danger and all the evil is paſt, but juſt then it will frequently happen, that the fever grows more ſevere, the difficulty of breathing increaſes, the cough turns more violent, ſo that it deprives the patient of all reſt both for the day and the night. But there

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* By this we may diſtinguiſh and know the meaſles from the ſcarlet fever.

† Doctor *Tiſſot* has obſerved, that a *bilious* vomit, one or two days after the eruption, has given more relief than the eruption itſelf. Ch. 2. p. 253.

generally comes to this a quick and relieving *diarrhœa*, which when it is moderate, as it were haſtily ſweeps away all evil. If this looſeneſs be too violent, it will weaken the patient; if it be of too long a duration, ſo that it continues for ſome weeks, the patient will fall into a conſumption, or be affected with a ſlow *hectic* fever, *tabes*, and a ſwelled *abdomen*. If no relieving *diarrhœa* ſhould happen, things will nevertheleſs go well if the patient falls into a gentle and uniform moiſture, for that will likewiſe entirely abate or leſſen the fever. A copious bleeding at the noſe will relieve the head-ach, the pain in the throat, and the indiſpoſition in the eyes. If theſe evacuations be properly managed, we need not fear the bad conſequences. But in caſe the fever and cough continue, the breathing ſhort, frequent, difficult and hot, the cheeks being red at the time, we have reaſon to dread the conſequences, as it indicates an inflammation of the lungs.

The patient is likewiſe in danger if the fever contineus and a pleuriſy comes on; likewiſe if the throat be inflamed ſo that breathing and ſwallowing are performed with difficulty. If the fever turns more gentle but nevertheleſs appears every day, an aſthma being combined with it, the body pines away, and a great deal of purulent matter be hawked up, then the lungs are hurt by ſome ulcer. The patient is in great danger of loſing his life if the eruption ceaſes too ſoon by re-entering the body and cauſing a delirium. The ſpots which are of a high red, or thoſe which grow pale too ſoon, likewiſe give us reaſon to apprehend a bad event.

We alſo dread that kind of meaſles which break out earlier or later than the time above fixed. This epidemical diſeaſe is ſometimes of ſo gentle a ſort, that ſome children have frequently got the better of the diſeaſe, even without having complained of the leaſt indiſpoſition; others again are more ſeverely attacked. It was with great difficulty that I could ſave a child at *Upſal* five years of age, in the year 1752, though the contagion of the meaſles was otherwiſe of a moderate kind. It was in the ſame room with another perſon who had the meaſles; its brother was affected with the ſame diſeaſe; it had the uſual ſigns of the meaſles, with fever, ſhivering, and a running of the eyes, but the cough was

ſo violent that it reſembled the hooping cough, and continued each time till a reaching aroſe; the fit was not however worſe every ſecond night. When this had continued in the manner mentioned, during one and twenty days, the meaſles at laſt broke out, and the ſymptoms were more moderate after that. A pregnant woman being attacked by the meaſles is in great danger, likewiſe thoſe who have weak lungs or are ſubject to any *hæmorrhage*, alſo thoſe who are incommoded by any kind of rupture; the cough gives them occaſion to much diſturbance. We ought to apprehend ſome fits of a convulſion if the patient ſweats a great deal during the firſt period, and little or no urine at all be diſcharged. A child who has the meaſles runs great danger if it ſucks its mother or nurſe whilſt ſhe is exaſperated or put into a paſſion.

The ſmall-pox and meaſles are often ſpread at the ſame time, and in one and the ſame place. But to my knowledge, nobody has ever had them both at once, but firſt the one and then the other; Profeſſor *Bergius* however gives an inſtance of it. See Narrative to *Colleg. Med.* 1765. p. 260.

The cauſe of the meaſles, and the ſymptoms it is attended with, is no other than the particular *miaſma* or poiſon of this diſeaſe, which mixing with the blood, irritates and inflames it. The ſevere cough ariſes from the contagion being abſorbed in the lungs by the breath, which cauſes ſuch ſpots in the inſide of them as we obſerve in the outſide of the ſkin, which prevent their perſpiring; but on the ſkin they ſcale off or fall away as meal: the ſame will happen in the lungs; but it is likely that it advances more ſlowly, as theſe are always moiſt. In fine, there is however ſomething within them which continually excites coughing, and it cannot get out in any other manner. If that which is hawked up be of any conſiſtence, it will more eaſily envelop and carry with it the mentioned ſcales or meal. That this is actually the caſe we find plainly by the run of the meaſles, which Dr. *Home* inoculated on ſome perſons. The greateſt part of them had no cough, and others had it ſo gentle and eaſy, that it was not worth mentioning.

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By what has been obſerved we find, that as in the ſmall-pox there are four, the meaſles have three *ſtadia* or periods. The firſt period is counted from receiving the infection till to the beginning of the eruption of the ſpots (*ſtadium contagii*). The ſecond (or *ſtadium eruptionis*) continues till the meaſles begin to deſquamate or ſcale. And the third (or *ſtadium exareſcentiæ*) begins then with the ſixth or ſeventh day, and ceaſes on the eighth or ninth day, when all the meaſles ſpots are fallen off.

The Firſt Period.

If the meaſles be of a very favourable kind, and the patient has freſh and healthy lungs, he will ſeldom want any other thing than good nurſing. The diet or nurſing here required is juſt the ſame as in the ſmall-pox, in reſpect to bed, bed-clothes, and apartments, as alſo food and drink. Therefore the obſervations I made in the chapter on the ſmall-pox concerning that point, likewiſe ſtand good here. Only, as the cough in the meaſles is ſeverer, we ſhould not venture to give any thing ſouriſh in the food or drink. The *miaſma* of meaſles is more volatile than the variolous matter, conſequently it is more apt to be repelled; therefore the nurſing in the meaſles ought to be managed with greater precaution in that point. It is likewiſe proper that no other than the neceſſary attendants be allowed to ſtay with the ſick perſon; neither ought we to ſuffer ſeveral candles to be burnt at night in the apartment. For both theſe circumſtances are troubleſome to the patient, and, according to the experiments of *Hales*, corrupt or infect the air in the room.

If the contagion of the meaſles be ſevere, or of a malignant kind, it will generally be neceſſary to bleed the patient; for the fever is here ſeldom too low, but commonly too high. The indications for bleeding are enumerated in the chapter on the ſmall-pox, p. 65. and ought likewiſe to decide here. Dr. *Mead* was once conſulted by another phyſician what method he uſed in curing the meaſles, as none of his patients died of that diſeaſe? The Doctor candidly anſwered, that he always ordered bleeding, as he apprehended the

lungs would otherwiſe be inflamed by the *miaſma* of meaſles. The phyſician returned ſome time after to Dr. *Mead*, and, thanking him for his advice, told him, that he had ſucceeded ſo well in following it, as not to have loſt any of his patients ſince. The blood of all thoſe whom I have ordered to be bled during this diſeaſe, had always an inflammatory cruſt: further experience will teach us whether this be conſtant or not. 2. It is neceſſary that the patient either be brought to vomit or purge.

If the patient be obſerved to have ſigns of a *nauſea*, an unclean tongue, a bitter taſte, a *vertigo*, head-ach, or any reachings, he muſt be made to vomit; which may be effected by giving him warm water to drink, with oil of olives or unſalted butter in it; or he may drink an infuſion of camomile flowers; or may have from the ſhop the three following powders:

℞ *Rad. Ipecacuanhæ*, gr. iij.
Sacchari albi, gr. xviii.
M. f. p. Div. in 3 part. æq. Dr.

Theſe are proper for a child of two or three years of age, it taking firſt one, and if that does not cauſe the deſired effect within a quarter of an hour, the child may take the other powder; but in caſe that neither will operate within a quarter or half an hour, the third may be given, which will certainly raiſe a gentle puking. None can vomit with ſo great a facility as children. Their fibres are more relaxed, and they have always in proportion a greater quantity of humours than an old perſon. Therefore I preſcribe emetics for children with greater ſafety than for full-grown perſons. If it be given in the above manner, it will never do any harm to patients who are not otherwiſe diſtempered. Should there be no ſigns or indications to vomit, but the belly be diſtended or ſomething puffed up, rumblings of wind being heard in it and vain efforts to ſtool, which incommode the patient; then a purge will become very neceſſary to him. We may take our choice of any of thoſe which were enumerated in the chapter on the ſmall-pox, p. 89. If the ſtomach and bowels be well cleanſed before the eruption comes on, a great many inconveniences will thereby

thereby be prevented, which otherwiſe would occaſion a diſturbance during the whole courſe of the diſeaſe; eſpecially the diarrhœa, which generally appears on the eighth day, will by this means turn out more moderate and gentle. In caſe the patient be affected with gripes and a diarrhœa from the very beginning, he ought nevertheleſs to make uſe of purges, but chiefly ſuch as are prepared of rhubarb, in order that the cauſe of the gripes may quickly be carried away, and the diarrhœa ſtopped.

3. Afterwards the patient may uſe the ſame remedies as we have propoſed, p. 90 and 91. No. 3, 4, 5, 6, and 7. In the mean time we muſt not neglect to preſerve the eyes; which we effect by turning them from the day-light, and by means of a tea-ſpoon dropping frequently milk-warm water of roſes into them, which waſhes away their ſalt humour, which otherwiſe would inflame them by irritating.

If a bleeding of the noſe ſhould come on beſides, it muſt not be ſtopped too early, for it carries off the head-ach and delirium: but if that evacuation ſhould increaſe to ſuch a degree that the lips and face turn pale, the hands loſe their natural warmth, or the patient feels an inclination to vomit; then we muſt immediately ſtop it. We have already enumerated the means of doing that, p. 94. where is obſerved how we ought to behave in caſe too great a vomiting, delirium, looſeneſs, or convulſions ſhould happen.

The cough is the moſt troubleſome ſymptom in the meaſles. For which prepare the following palatable pectoral juice: Take the yolk of an egg, pour on it gradually two ounces of cold expreſſed oil of almonds, beating it well together all the while; which being well mixed, add two ounces of thin pearl-barley ſoup, and one ounce of *ſyrupus Altheæ*, or the *ſyrupus hordeatus*, beating all together till it acquires the appearance of thick milk; of which the child may take one or two ſpoonfuls at a time as often as is judged requiſite. But in caſe the patient be troubled with a looſeneſs, it will be ſafer to get *Lohoch album Pariſienſe* from the ſhops, and uſe it as the former. Liquorice, if at hand, may conſtantly be kept in the mouth.

However, the moſt effectual aſſiſtance, in allaying the cough, may be expected from tea of elder flowers, mixed with a fifth part of milk, which ought to be drank warm, and freely. Poorer people may diſſolve two drachms of liquorice-juice in a pint of ſoup made of groats, taking a ſpoonful of it at a time as often as the cough is troubleſome. The cough is very painful, but ſeldom becomes ſo dangerous before, as after the meaſles are over. If we obſerve any ſigns that the throat will become affected, we ought immediately to uſe ſome lenient gargariſms, ſuch as you will find before enumerated, p. 93 and 102. If the throat be much ſwelled in the inſide, we ought then to apply a warm poultice of muſtard-ſeed (*ſinapiſmus*), taking it off again after it has for a little while cauſed a painful ſenſation.

The Second Period.

At the approach of the fourth day it will become a matter of importance to prevent the patient from agitating or toſſing his body much in the bed; for he ought now to lie quiet, as we wiſh him not to come into profuſe ſweat, but only into a gentle moiſture. We have learned by experience that the meaſles then break out well, ſo that the interior parts are ſaved. He may then very well take a gentle emetic, in caſe it be wanted; or we preſcribe one or two camphire powders, or a camphire emulſion; or, in caſe the eruption comes too ſlowly, we give him a powder of muſk, (ſee p. 94.) chiefly adviſing him to drink freely. The latter is likewiſe neceſſary, though the eruption ſhould come out of its own accord; in which caſe the camphire and muſk will not be wanted.

After the eruption is performed, we ought frequently to take notice of the colour of the ſpots, obſerving whether they remain for three days on the ſurface of the ſkin, and after that deſquamate by little and little, and in the ſame order as they broke out. In caſe the colour be too red, the patient ought to uſe the beforementioned cooling remedies, and to take copiouſly of the drink propoſed to him in the firſt period: whereas, if the colour be red in ſome ſpots and pale in others,

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we order him ſome powders of camphire, or a camphire emulſion.

If the ſpots ceaſe too early, or re-enter the body, the laſt-mentioned powder or emulſion muſt be taken in a greater doſe, or one or a couple of powders of muſk. We muſt likewiſe then drink copiouſly of a warm tea of elder flowers, or of the *flores ulmariæ*, and, beſides that, a ſinapiſm, or a veſicatory of cantharides, ſhould immediately be applied to the calf of the leg; or, in caſe the patient is already delirious, theſe bliſters are to be put upon the neck. It is fortunate if the ſpots then come out again. But it is moſt adviſeable ſo to preſerve the ſick from cold, paſſions, frights, and ſimilar accidents, that the ſpots do not re-enter the body at all. If the patient be very uneaſy or unruly in this period, we may give him one or two tea-ſpoonfuls of the *ſyrupus e meconio*, eſpecially towards night, and that as often as the uneaſineſs returns.

The third Period.

The moſt dangerous days are now coming on, which ſoon decide whether the patient will recover, or fall into any new dangerous diſeaſe, or die; therefore it is now of great importance to attend the patient well; and, obſerving the ſkin and pulſe to be ſoft, we may expect that a gentle moiſture or ſalutary nocturnal ſweat will ariſe, by which the fever diſappears. When matters ſtand thus, we ought to give nothing elſe to the ſick than plenty of drink, which ſhould be milk warm. But if there be no moiſture or ſweat coming on of its own accord, and our patient does not complain of any gripes or rumbling in the lower part of the abdomen, the ſtomach not being diſtended; then our endeavours muſt be to bring on this moiſture; which may be effected by warm drink and camphire powders: however, no more of theſe remedies muſt be given than are requiſite to throw him into a gentle ſweat, which ought to be ſupported till the fever is allayed; after which the patient muſt be purged twice or thrice.

But if we find the ſtomach diſtended, the conſtitution dry, and the patient feels ſomething of gripes and

and rumblings of wind in the lower part of the abdomen, then we may apprehend a diarrhœa, which likewiſe in that caſe ſeldom fails to come on, and that in ſuch a hurry that ten, twelve, or a greater number of ſtools follow cloſe after each other. If theſe afford relief, ſo that the cough is diminiſhed, the eyes look bright and ſparkling, the ſick can move and riſe with leſs trouble, and the ſtomach becomes ſoft; then the diarrhœa is uſeful, and ought by no means to be ſtopped; it will ceaſe of its own accord, and the patient recover. But if ſuch a looſeneſs be attended with ſevere gripes, which will not be allayed by the application of warm napkins or wooden plates; we preſcribe a draught of rhubarb to the patient, propoſed p. 89. and apply to the ſtomach an unguent prepared of two drachms of *theriaca*, half a drachm of expreſſed *oleum macis*, and two drops of the diſtilled *oleum cymini*. Theſe are to be mixed well together and ſpread on a ſkin, and applied around the navel, which is previouſly covered with a piece of cotton. But if the looſeneſs go too far, and be not attended with the above-mentioned happy circumſtances, or be of too long a duration, then we muſt ſtop it by the remedies already propoſed, p. 94 and 98.

If no perfect criſis ſhould happen in any of the above-mentioned ways, nor by a copious diſcharge of urine, but the fever continues increaſing, as alſo the cough, and the breathing be ſhort, quick, and difficult, with red cheeks, then a new fever will ariſe called peripneumony, or an inflammation in the lungs, which now is very dangerous. The patient muſt then immediately be bled in the arm, and on that ſide where the cheek looks reddeſt. Immediately after, in caſe the pulſe has been ſoft, we apply a bliſter of cantharides on his back between the ſhoulders, and that having taken effect, we put another on the breaſt of that ſide where the bleeding was performed. The bliſters ſhould be ſtrewed with a little camphire finely pounded, before we apply them, in order to prevent their cauſing a ſtrangury. Theſe having made the breathing more eaſy and leſs quick, we give our patient a camphire powder, ſo that he may be made to ſweat, letting him drink frequently of the following

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ing mixture: Take an equal portion of whey and boiled water, in which diſſolve the juice of two parts of clarified honey, and one part of good vinegar that has been boiled to the conſiſtence of a ſyrup. This ought always to be drunk ſomething warm. If the patient now begins to hawk up a yellowiſh and blood-ſtained matter with eaſe, then we neither bleed nor give him any more powders of camphire, but the above-mentioned drink, and ſome barley ſoup, as then to all appearance the ſick perſon will happily recover. When the patient grows tired of this laſt-mentioned drink, we may prepare another of an equal portion of water and milk, for inſtance, a gallon of each. Juſt when they are boiling add as much vinegar as is neceſſary to curdle the mixture. The whey muſt be ſtrained through a blotting paper; then diſſolve therein a drachm of purified nitre, and as much ſugar as will be required for taking off the ſourneſs and making it palatable. Richer perſons may uſe an equal portion of *ſal eſſentiale acetoſellæ*, inſtead of nitre. If the body be coſtive, a clyſter muſt be injected each day, morning and night.

In caſe the patient is affected with a pleuriſy and a violent fever, then bleeding muſt be adminiſtered in the arm on that ſide where the ſhooting pain is felt, and immediately after that a bliſter of cantharides applied to the place affected, and that having drawn, we give a camphire powder, and order a copious warm drink. The drinks above propoſed are the moſt proper. When the expectoration begins, we ought neither to bleed nor to give ſtrong ſudorifics, as it might thereby be ſtopped, to the great peril of the patient. It is ſufficient if the ſick perſon falls into a gentle ſweat, which by drinking may eaſily be ſupported. The veſicatory muſt firſt be ſtrewed with pounded camphire, as was before obſerved. Clyſters are likewiſe here to be injected, in caſe the patient be coſtive. If we cannot prevail on the patient to uſe the veſicatory of cantharides, then we ſubſtitute a ſinapiſm in its place, which likewiſe is to be applied on that part of the breaſt where the ſhooting pain is felt, or we put on it a bladder filled with elder and camomile flowers, and ſaffron boiled in milk, changing it often;

often; or we anoint the place affected with *oleum lini camphoratum*, or the *unguentum altheæ* which is diluted with the *ſpiritus camphoratus:* or we may apply to the place where the pain is affecting, five or ſix leeches; or, inſtead of that, cupping glaſſes; or, if nothing elſe is at hand, take a ſour loaf lately come from the oven, cut it in two pieces ſo that the inſide or crum may be applied, whilſt it is ſtill hot, on the ſide where the pain is affecting.

Moreover, if we find the fever not abating, but that it returns every afternoon, an aſthma coming on and a hoarſeneſs, matter being hawked up and the body pining away; then we adviſe the patient to attempt the cure by milk or milk-whey. If we obſerve an inflammatory cruſt on the blood, at the bleeding of the patient, then milk will not be proper for him, but we ſhould then curdle goat's milk, for inſtance, with a gut, or by the white of an egg, ſtraining the whey through blotting paper, of which a quart or three pints are to be drank each day till the patient be reſtored to perfect health. If we have no reaſon to ſuſpect that the blood be too coherent, but its being too thin, then it is more proper to uſe milk, and indeed beſt of all to live intirely on it; ſee *Tiſſot*, p. 257. and *V. Haller's Elem. Phyſiol.* VII. T. II. p. 42. or we may boil the jeſuits bark with the milk *. Human milk is beſt, next to that the milk of aſſes or mares, then goat's milk; but cow's milk is leſs proper than any of the former †. We muſt

* Its ſalutary effect in conſumptions is ſhewn by *V. Haller* in his *Opuſcula*, III. p. 371. and by Mr. *de Haen*, in his *Ratio Medendi*, XII. p. 236. The Engliſh recommend the *Elixir vitrioli:* to which *De Haen*'s ſentiments likewiſe agree, he proving it by ſeveral inſtances, p. 239.

† It is probable that the milk of aſſes and mares has the greateſt diſſolvent power, but that human and ſheep's milk is moſt nouriſhing: ſee *Elem. Phyſ.* VII. T. II. p. 28—39. Mr. *F. C. Medicus* has the ſame good opinion of and confidence in the effect of the bark in this diſeaſe as in the ſmall-pox, and thinks that the eruption may thereby be ſafely diſſolved. Experience muſt decide this. If the meaſles are combined with a putrid fever, a weak and ſoft pulſe, an unclean tongue, and a bilious vomiting, then the bark will no doubt be proper, after the ſtomach and bowels are well cleanſed.

drink as much as the ſtomach eaſily can receive every day, avoiding every thing ſour and ſalt, and taking care to have a gentle exerciſe and the freſh air of the country.

The eyes are in general red and inflamed during this period, and they will receive damage if we do not take proper care of them. I have already obſerved, that one ought to drop the *aqua roſarum* into them; but if that has not been ſufficient to prevent the inflammation, we muſt then immediately apply leaches under the eyes and on the temples; and when thoſe do not ſuck enough we ſhall be obliged to direct the ſteam of hot water on the eyes through a funnel, by which means the diſcharge of blood will be as great as we chooſe: after that we muſt apply a ſmall bliſter upon each temple, and after theſe have bliſtered, we give the patient a proper purge, which is to be repeated ſeveral times, according as his ſtrength will allow. A dry cup applied to the nape of the neck has been ſometimes of ſervice. The following fomentation will likewiſe prove conducive: take the pulp of a tart apple baked in the aſhes, make it into a poultice, together with five grains of pounded *camphire* and twenty grains of *ſaffron*, ſpread it upon fine ſoft linen, and apply it on each eye, of a little more than milk-warm heat.

CHAP. XV.

The Inoculation *of* Meaſles.

WE have learnt by the treatiſe on meaſles in the above chapter, that altho' it generally be a gentle diſeaſe, it happens frequently to put the patient in the utmoſt danger of loſing his life. Therefore phyſicians have thought of inoculating it as is done with the ſmall-pox, expecting the ſame advantage from it. Doctor *Francis Home*, a member of the College of Phyſicians at *Edinburgh*, was the firſt who has had an opportunity of making an experiment of it. He inoculated the meaſles in the ſame manner as we inoculate the ſmall-pox, but on both the arms, and without any previous preparation. Inſtead of thread of inoculation, he uſed a piece of cotton, dipped in a little blood

blood which was got from a ſick perſon affected with the meaſles by ſcratching the ſkin where the ſpots were cloſeſt. He obſerved that the inoculated fell ſick in the night generally after the ſixth day, and that all were eaſily and ſucceſsfully cured without any dangerous conſequences being left. They had likewiſe as much running from the eyes and ſneezing, as thoſe who get the diſeaſe by natural infection; but the meaſles by inoculation were ſcarce at all attended with any coughing. It was likewiſe finiſhed by a *diarrhœa:* he found beſides that the children who before the inoculation were troubled by ſome eruption or other, got rid of it together with the meaſles, and the wounds of inciſion did not break out again to diſcharge a matter when the eruption of meaſles came on, as it otherwiſe happens at the inoculation of the ſmall-pox. Thus we gradually lift up the veil under which innumerable facts are hidden.

We are chiefly the firſt in imitating foreign cuſtoms. Would that we were as eager in following them in what is uſeful, and may give ſtrength to our country!

CHAP. XVI.

ON THE SCARLET FEVER.

AN *exanthematic* fever is ſometimes epidemical among children, but ſeldom affects full-grown perſons; in it almoſt the whole body grows as red as ſcarlet cloth, and therefore it is called the *ſcarlet fever, (febris ſcarlatina.)* This is however a rare diſeaſe, and has now ſince the year 1741 not been epidemic at *Upſal*, and as far as I know it has only been heard of in *Stockholm* in the year 1763, during the ſummer ſeaſon, and in one part of the autumn, in which place it ceaſed during the months of November, December, and January, but begun to appear again in the month of February, in the year 1764.

If this diſeaſe be not more frequently ſpread in other places, it is no wonder that ſo few phyſicians have written any thing about it. Some reſemblance ſeems to be between this and other diſeaſes, as the meaſles, nettle-

nettle-fever, (*febris urticata*,) the miliary fever, and the *eryſipelas*. Therefore it has been conſidered by ſome writers as belonging to ſome one of theſe diſeaſes. That friend to mankind, Mr. *Tiſſot*, calls it a diſorder of the throat (*eſquinancie*) in his *Avis au Peuple*, § 112, &c. of the *Paris* edition. But if we conſider the run of the diſeaſe (*decurſus morbi*), its conſequences, and the nicety and cautions required in preventing them, we muſt agree that it deſerves a particular name *.

I will here deſcribe this fever according to the journal I kept of it in the year 1741, when it was to be met with almoſt in every houſe at *Upſal*, where children were to be found, affecting likewiſe ſome full grown perſons. It was ſometimes gentle, but ſometimes very ſevere, ſo that of ſeveral children who lived under the ſame roof, it frequently happened that ſome of them were eaſily cured, whereas the others recovered with great difficulty.

This ſcarlet fever began always with an indiſpoſition in the throat, after which ſome weakneſs followed, and a tenderneſs or painful ſenſation over the whole body. When the firſt twelve hours, more or leſs, were elapſed, a violent *nauſea* came on, pukings which ſometimes were bilious, ſhiverings, headach, and a great propenſity to ſleepineſs during the firſt days. The ſickneſs in the throat was in the mean time increaſing

* Doctor *Sydenham* calls it *ſcarlatina*, and ſeems only to have ſeen that which was very gentle. Doctor *Morton*, who lived at the ſame time, and in the ſame place, has ſeen a very ſevere kind of it, but looked upon it to be the ſame with the meaſles. Doctor *Simon Schultz* deſcribes a very lethiferous kind of it in Eph. N. Cur. A. 6 *et* 7; but calls it a malignant miliary fever, *purpura maligna*. Doctor *Navier* in his *Diſſertation ſur pluſieurs Maladies Populaires* calls it *fievre rouge*. Mr. *Plenciz* adopts the name Doctor *Sydenham* has given to it: *vide ejus Opera Medico-Phyſica Tractat.* iii. Both theſe former gentlemen have ſeen the diſeaſe both benign and ſevere. Mr. *Plenciz* tells us, that the ſcarlet fever was ſo little known in the beginning of the laſt century, that Doctor *Sennertus*, who lived at that time, though he was a man of great reading, did not know it, and was puzzled what name he ſhould give it.

quickly,

quickly, ſo that ſome patients had their *fauces* and inſide of their throat very red and inflamed within the firſt four-and-twenty hours. In the interval of their ſleep they were anxious, uneaſy, and troubled with a ſhort and difficult breathing. I obſerved none of them to get affected with *epilepſy* or convulſions, which ſymptom however is mentioned by *Sydenham* and others. Small red ſpots broke out generally on the ſecond day, but in ſome patients on the third day. The ſpots appeared firſt in the face, after that on the neck, and then on the breaſt, lower part of the body, thighs, legs and feet. A part of theſe ſpots were ſmall, and a part a little bigger, but after four-and-twenty hours they had ſpread and dilated themſelves ſo much that they made only one ſpot over the whole face. The ſame happened in the other parts of the body, eſpecially in the flexures of the arms; however they diſappeared in the ſame order that they had broken out, ſo that the redneſs in the face for inſtance began to go off when the legs and feet were moſt red. Theſe ſpots were not the leaſt elevated either on the firſt day or any of the following; nevertheleſs that part of the body where the redneſs ſtill remained, appeared bigger than uſual, and collapſed or ſubſided again when the redneſs went away. At the preſſure with the finger on any place of the body, that ſpot looked white as in the *eryſipelas*, and immediately after the finger being removed, the red colour returned again.

A difficulty of ſwallowing continued to trouble the patients till towards the end of the fourth day, and one could find that they felt an impediment in ſpeaking, and on their ſpeaking, it ſounded as when one talks who has ſome obſtruction or ſtoppage in the noſe. But at the end of the fourth day, they begin partly to endeavour to cough, partly to cough and hawk up a quantity of ſlime, which was more copious on their being ſyringed in the throat. The difficulty of ſwallowing now went away, the eyes began to look ſprightly, and the patients likewiſe anſwered directly to any queſtions put to them.

It happened beſides, at this laſt-mentioned time, that ſome patients on a ſudden got four, five, or ſix looſe ſtools,

ſtools, which ceaſed of their own accord, and mitigated the diſeaſe.

Some of them likewiſe were affected with a bleeding at the noſe on the beginning of the fifth day, which alſo proved beneficial. Others had that hæmorrhage on the ſeventh day, but in a ſmall degree.

The heat and fever, which had hitherto been pretty ſevere, eſpecially in the afternoon and towards night, began alſo to abate about this time, but did not ceaſe intirely till the ſeventh day.

A delirium generally appeared in the evenings of the firſt four days, but was of no great conſequence, as it went away on the hours when the fever was abated.

The pulſe always continued quick, more or leſs; but in ſome perſons high, in others low, which latter were affected moſt ſeverely.

Stools ſeldom came on of their own accord, unleſs on the fourth day, as I mentioned; nor did I obſerve any one to fall into a ſweat ſooner than in the night after the fourth day; neither did they ſpit, as otherwiſe is the caſe in difficult diſorders of the throat: the noſe was generally dry in the inſide, and no ſneezing troubled the patient as it does in the meaſles; neither was there any running of the eyes to be obſerved.

The urine was diſcharged ſometimes, but not without efforts; however it was not ſo red as one might have expected, conſidering the heat: I never found it to be mixed with blood, as ſome authors obſerve. None was troubled by coughing, till the ſlime, which we obſerved, looſened in the throat, and then it was generally to ſome effect, in hawking up matter. What the ſick complained of moſt, was the diſorder in the throat, and the heat in the ſkin.

On the fifth day, in the morning, the redneſs began to diminiſh, firſt in the face, and gradually afterwards on the other parts of the body, ſo that on the eighth day in the morning no more redneſs remained. On the ſixth or ſeventh ſome ſmall and pale bladders appeared, reſembling the white miliary ſpots; but they were quite empty, and had their ſeat chiefly in the neighbourhood of the ears, on the neck, on the wriſts, and on the feet. Theſe bladders grew gradually

broader, and made way for the deſquamation of the *epidermis* which afterwards took place over the whole body, but was eſpecially remarkable on the hands and feet, ſo that it did not fall as a meal, or in ſingle ſcales, from thoſe places, but large pieces could be drawn off. This deſquamation was performed pretty faſt in ſome perſons, but in others very ſlowly, continuing even from two till three weeks. The more copious the eruption had been, and the greater the heat which had affected the ſkin, the more did it ſcale off.

The patients were exceſſively tender in reſpect to heat and cold, both during and for ſome time after the deſquamation, ſo that they felt pain by only the chamber-door being opened, or by touching a warm napkin.

The ſcarlet fever ſeemed to be quite at an end after the eighth or ninth day: the ſick complained no more, but left the bed, got an appetite and found ſleep. But now it was of importance not to become too ſecure: for notwithſtanding ſome complied with the admonitions, and kept within doors in a moderate warmth, taking purges, and uſing a moderation in food and drink, nevertheleſs the glands under the ears and the under jaw ſwelled, firſt and moſt on one ſide, and then on the other; though this ſwelling was of very little conſequence, as it went away gradually and of its own accord. But others, who did not chuſe to follow the advice, and to confine themſelves for ſome weeks on this account, began to look low-ſpirited between the eighteenth and twenty-ſecond days, when the diſeaſe was ſuppoſed to be quite cured; and they complained of weakneſs: juſt at which time, firſt the face and then the body began to ſwell, as in a dropſy (*anaſarca*); and upon this came on a fever, anxiety, uneaſineſs, oppreſſion, and aſthma. Very little was diſcharged, and it is ſaid to have been bloody in ſome patients, or appeared as water in which freſh meat has been waſhed. Several children have been loſt in this *ſtadium* at *Stockholm* in the year 1763, that is to ſay, ſuch as did not follow advice, or aſked it too late.

As I have ſeen but few who have got ſuch a ſwelling, I will here relate the following obſervations of Dr. *Plenciz*, made in regard to that point.

1. That

1. That ſuch a dropſy has followed a very gentle ſcarlet fever now and then, but chiefly comes after a malignant kind, which has been attended with much eruption.

2. That thoſe ſwelled moſt, who had the greateſt deſquamation; however, that ſome patients ſwelled a great deal who had leſs remarkable deſquamation.

3. That children were more ſubject to this ſwelling than full-grown perſons.

4. That it was ſtronger during the winter than in the ſummer, and likewiſe longer in thoſe who went out too early than thoſe who kept within doors.

5. That a greater number die in this period than during the eruptive fever itſelf. And finally,

6. That there is no neceſſity that the ſwelling ſhould follow the eruptive fever, as it is often prevented by neceſſary precaution. He confeſſed, however, that ſometimes it could not be prevented at all, notwithſtanding he had taken all poſſible meaſures againſt it.

Such is the run of the ſcarlet fever. However hereby muſt it be obſerved, that, as far as we know, it always appears as a contagion; but that it is not confined to a certain ſeaſon; for it was ſpread at *Upſal* in the year 1741 during the winter, and at *Stockholm* during the ſummer and ſome part of the autumn of the year 1763, and appeared again in 1764, in *February*. Neither does it appear to depend on any certain wind or weather; for it has been very different the three abovementioned times: ſo that it is plain that it is contagious. And it chiefly attacks children who are under fifteen years of age, though older ones cannot ſecure themſelves, unleſs they have been afflicted with it beforehand; for I have never heard of its ſeizing any one more than once.

Nor ſhould it be forgot, that ſeveral children in the ſame houſe may have the ſcarlet fever in a very different degree, ſo that while one ſcarce ſeems to be ſick, another is in the greateſt danger of life, and a third not to be recovered by any endeavours human art can afford.

I have ſome reaſon to think, that, of three children in the ſame houſe, one was cured of this diſeaſe without its coming to an eruption. For two of them had

the ſcarlet fever in a high degree, one after the other; and the third was likewiſe affected, having a diſorder in the throat, nauſea, pukings, ſhiverings, heat, and after that, within twenty-four hours, a very profuſe ſweating, by which all the evil was finiſhed.

By all that we have above obſerved, it will be eaſy to diſtinguiſh the ſcarlet fever, eſpecially if we know of its being ſpread in the neighbourhood, or that it is in ſuch a place, from whence the contagion might have been conveyed to the patient.

It is true, that it begins at firſt in the ſame manner as other exanthematic fevers: ſee p. 68. But if we hear that the perſon taken ill has had the ſmall-pox before, or obſerve that no tears flow from the left eye, or find that they are not hot; then it is likely that it will not turn out a ſmall-pox. If there be no dry cough, no frequent ſhiverings, and no hot water running from the eyes, one cannot expect the meaſles: but if ſpots have broken out already, one cannot well miſtake it for either.

The run of the ſcarlet fever, and the circumſtances attending it, likewiſe plainly ſhew, that it conſtitutes a particular kind of exanthematic fever, and therefore ought to be diſtinguiſhed from them. For,

1. In the ſmall-pox the eruption is raiſed above the ſurface of the ſkin, and tends to a ſuppuration. In the ſcarlet fever the ſpots are flat, and not elevated at all.

2. In the meaſles we ſhall not find the ſpots ſo red, but a little elevated above the ſkin in the face during the firſt days; from the eyes runs a hot water, ſneezings are frequent, the thin ſkin or *epidermis* ſcales off moſtly as a flour or meal, though not ſo much by far as in the ſcarlet fever, the fever of this being alſo at an end on the eighth day; but, in the meaſles, the fever will juſt then, or on the ninth day, frequently ſet in much harder, the difficulty of breathing increaſes, and the cough grows more violent.

3. In the nettle-fever *(febris urticata)* the ſpots are elevated alſo.

4. In the miliary fever *(miliaria)* I have likewiſe obſerved the feet to ſwell, but not the whole body, as in the ſcarlet fever, in which, as we obſerved, the ſwell-

ing begins firſt in the face, ſince one has been fever-free for about a fortnight.

5. In the ſpotted fever *(febris petechialis)* the ſpots do not come out ſo ſoon, nor do they run together.

6. In the *eryſipelas*, only a particular place will be affected; for inſtance, the face, or feet and legs, turn red, and ſwell; but here it is univerſal over the whole body. When the *eryſipelas* goes off, it leaves the ſkin wrinkled, and the *epidermis* falls off like ſcales.

Beſides, the diſorder in the throat is not ſo ſevere in any other exanthematic fever as in the ſcarlet fever, and the pale bladders which here begin the deſquamation are not to be met with in any one of the other exanthematic fevers.

The cauſe of the ſcarlet fever is as unknown to us as that of the ſmall-pox and meaſles. We only know that it is propagated by the contagion, and that people would be ſecure from being infected, provided they could avoid the contagion. We ſee very plainly that the ſkin here is inflamed; for no more is required than redneſs, heat, pain, and ſwelling, to make an inflammation, which is here not of a kind that tends to a ſuppuration, but only ſeparates the *epidermis*, and cauſes it to fall off from the other ſkin. The inflammation in the throat muſt be ſimilar to that of the ſurface of the ſkin; for neither does it ſuppurate, but cauſes ſcaling, or turns to a gangrene. That a great and copious deſquamation may happen in this place, is plainly proved from the caſes related by Dr. *Plenciz*, p. 186 and 188.

The ſcarlet fever is ſometimes, and in ſome perſons, ſo favourable and gentle, that the patient only requires a good nurſing: whereas ſometimes it is ſo lethiferous that it will carry off the patient in a day or two. Children generally come off more eaſily than full-grown perſons in this diſeaſe. We commonly look upon it as a good ſign when the eruption does not take place ſooner than on the third day; but I have frequently found, both in the year 1741 and 1764, that the diſeaſe has proved favourable notwithſtanding the eruption came out on the ſecond day.

Strong inflammation in the throat, and the difficulty of ſwallowing which ariſes from thence, are bad ſigns;

alſo a great heat in the ſkin; quick and low pulſe; ſhort, frequent and difficult breathing, and much weakneſs; likewiſe too much or too little ſleep; alſo a ſtrong delirium, following a ſevere head-ach. We likewiſe eſteem it an unfavourable ſign, when the patient is troubled with uneaſineſs, anxiety, and toſſes about much in the bed; conſequently ſymptoms contrary to theſe announce a favourable event.

When the ſpots break out ſometimes more, ſometimes leſs, and are more or leſs red; then the conſequence generally will be a ſevere and violent delirium, and after that either a ſudden death, or firſt a palſy *(paralyſis)* in either of the ſides, and then death. But if at that time a *pus* ſtained with blood ſhould come out through one of the ears, there will ſtill be ſome reaſon to hope for a recovery.

During the time of eruption it ſometimes happens that the ſpittle is ſtained with blood, as well as the urine is mixed with blood in other patients, afterwards when the body ſwells. Dr. *Plenciz* aſſures us, that this circumſtance ſignifies neither good nor harm.

When younger children are affected with the ſcarlet fever, we ought to pay attention to their gums, and the ſigns of dentition (*vide* p. 21 and 22.); for if that likewiſe ſhould trouble the patient, there will be much danger.

The patient is likely to be affected with a dropſy, after a copious eruption, together with a great heat in the ſkin, and a profuſe deſquamation. And if after that, having been well for about a fortnight, the appetite begins to fail, the patient looks pale, complains of weakneſs, and has no copious diſcharge of urine, and the dropſy then actually comes on, there will be great danger: for if proper remedies be not timely uſed, and the water does not go off; fever, great thirſt, reſtleſsneſs, delirium, and convulſions, enſue; then nothing more will avail; but certain death cloſes the ſcene.

The cure of the ſcarlet fever, during the firſt period, is generally the ſame with that of the meaſles. If the diſeaſe be favourable, ſcarce any other thing will be required than a good nurſing, both in reſpect to apartments,

partments, bed, and bed-cloths, as well as to food * and drink: (ſee p. 83, and the following, and likewiſe the chapter on meaſles). It will be moſt ſuitable to the circumſtances of the common people, to give their children to drink a mixture prepared of four parts boiled water and one part milk, which drink ought always to be kept warm. Although the diſeaſe has been very favourable, yet the children ought to be kept within doors for three weeks after the eruption and fever are at an end; which ought to be obſerved whether it be winter or ſummer, becauſe, as I mentioned before, a perſon is not ſecure from falling into the dropſy even after a favourable ſcarlet fever.

We know the ſcarlet fever to be very malignant, and that it turns very ſevere, if the patient immediately and without any manifeſt cauſe loſes his ſtrength, and from the very beginning is affected with a difficulty of ſwallowing, his voice is altered, he breathes ſhort and difficult, and the ſurface of the ſkin is very hot. In that caſe the firſt queſtion will be, if the patient ſhould be bled? This ought immediately to be decided according to the reaſons and arguments alledged, p. 87. The bleeding will generally be of an indiſpenſable neceſſity to a full-grown perſon, and muſt be repeated after a few hours, if the above-mentioned bad ſymptoms continue to trouble him: but in reſpect to a child, the affair is very nice. One muſt judge and decide by the violence of the diſeaſe; and in caſe bleeding cannot be performed, we ought to apply leeches under the ears, in order to draw off ſo much blood as is wanted to diminiſh the fever and inflammation. This application will be of ſtill greater importance, if the child at the ſame time labours under a difficult dentition, it being then the only remedy we know of, that can ſave its life.

* If ripe fruit is to be gotten, as cherries, ſtrawberries, raſpberries, bilberries, juicy apples, pears, and ſweet oranges, we may by all means indulge the patient to eat of them, though but little at a time. Nothing quenches the thirſt and refreſhes ſo much as theſe in hot fevers. Beſides, ſuch fruits diminiſh the fever itſelf, increaſe the urine, and keep the body open.

When nauſea and vomiting enſue, they ought to be promoted with milk-warm water, or camomile tea, of which the patient ſhould drink after each puking till it returns clear again: (ſee p. 150). for an emetic will here hardly be wanted. But, if it be judged neceſſary, it may be uſed according to the advice given, p. 150.

When the reaching ceaſes, which however ſcarce ever happens here, ſtools will commonly follow; but in caſe it does not, and the ſtomach is found diſtended and puffed up, rumblings of wind are heard, and the child makes vain efforts to ſtool; then it will become neceſſary to give it a gentle purge; for inſtance,

℞ *Elect. Lenitiv. Edinb.* ʒ ß.
Cremor Tartari, ʒj.
Syr. Roſar. Solut. ʒ ß.
M. D. Sr. A gently-purging juice.

To be given a tea-ſpoonful at a time every hour till it operates.

Or we may chuſe one of the purges which are propoſed, p. 89. But if we ſuppoſe the eruption to be very near at hand, then we ſhould rather inject a clyſter, made, for inſtance, of three gills of whey, two ſpoonfuls of oil of olives, and a little ſugar, adding a drachm of nitre for the firſt day, but not afterwards; for ſuch a clyſter ought to be injected every day during the whole courſe of the diſeaſe, and ſometimes twice a day when the fever is violent. We muſt however chuſe, for that purpoſe, thoſe hours of the day on which the fever is leaſt violent.

Our intention by this is to prevent dangerous accidents and ſymptoms during the diſeaſe, and to leſſen the inflammation in the throat and the ſurface of the body as much as poſſible.

But a particular attention to and care of the throat is nevertheleſs requiſite. Therefore we muſt prepare thin fomentations of pounded leaves of mallows (*fol. malvæ*) four ounces, and bruiſed ſeeds of flax two ounces, which muſt be boiled in milk to the ſubſtance of a thick poultice, ſpreading it on linen rags in order to wrap it round the neck, and of a moderate warmth. There ought to be one ready to apply as ſoon as the other

other grows cold. In caſe of neceſſity we may uſe a poultice of muſtard-ſeeds for the ſame purpoſe, which however we muſt remove as ſoon as it has cauſed ſome ſmall red pimples on the ſkin of the neck.

2. Gargariſms, prepared by boiling ſome ſlices of figs with water. If the patient has not ſtrength enough to gargle with this, he muſt be contented to keep it frequently and for ſome time in his mouth. Or we ſyringe him often but gently in his mouth, always at the ſides of it, by the following compoſition: Tea of elder-flowers three pints, elder-vinegar two ſpoonfuls, and two ſpoonfuls of jelly of black currants, (which likewiſe in England are called ſquinancy berries, on account of their great uſe in diſeaſes of the throat.)

3. We may alſo allow the patient to ſwallow ſome of theſe berries preſerved.

4. A ſpunge, dipped in hot water and elder vinegar, ſhould be put on a piece of cloth and placed on the breaſt, in order that the air which the patient is breathing may be filled with this diſſolvent vapour. As the patient is generally affected with dryneſs and ſtoppage in his noſe, and conſequently breathes with open mouth, by which the tongue and throat grow very dry; therefore,

5. We ought frequently to moiſten the noſtrils with a roll dipped in warm milk.

If all this ſhould not procure any relief in the throat, then we muſt apply leeches under the ears *; and in caſe of the utmoſt neceſſity, to ſcarify the inſide of the

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* Sir *John Pringle* recommends the following gargariſm in diſeaſes of the throat; which however I have not as yet tried:

℞ *Decoct. Pector. Lond.* ℥xv.
Mellis cōmun. ℥j.
Spiritus Salis Ammoniaci, ʒj.
M.

We have ſtill to learn by experience whether the wild roſemary (*ledum paluſtre*) will prove as uſeful in this diſeaſe as it is ſaid to be in other diſeaſes of the throat, by a *Hungarian* phyſician. It is to be uſed as a fomentation round the neck, and as tea for gargariſm,

throat

throat with a covered lancet. See *Heiſter's Surgery*, P. II. c. 94.

When lumps of ſlime begin to be hawked up, then the moſt ſignificant ſymptoms are paſt; and after that it is only required to keep the throat or neck well covered, and ſometimes to uſe ſyringings.

We ſhould give the ſame refrigerant powders internally, as are propoſed in p. 90. No. IV.; but as, at this time, theſe can ſeldom be ſwallowed, we are obliged to calm the fever with cooling food and drink, eſpecially that which was propoſed in the place now quoted. The richer ſort may uſe lemon-juice inſtead of vinegar.

If a bleeding at the noſe ſhould enſue, we ſhould obſerve what was ſaid above, p. 94. If convulſions come on, we muſt follow the advice given in the chapter on that ſubject.

If a delirium ſeizes the patient on the firſt days, towards night, when the fever is ſevereſt, and goes off when the fever is more gentle; then nothing elſe is required than what has been propoſed already for diminiſhing the fever. But if the delirium comes on the ſixth or ſeventh, or any one of the following days, it will be attended with greater danger, and in that caſe leeches ought to be applied as before mentioned, or the patient to be bled; alſo clyſters muſt be injected, and ſinapiſms applied on the calves of the legs, or a veſicatory in the nape of the neck. The caſes which are enumerated by Dr. *Plenciz* ſhew, that ſuch a delirium has not enſued, unleſs neceſſary evacuations were neglected from the beginning of the diſeaſe.

On the fourth and on the following days we allow the patient to drink tea of elder flowers; for it would be in vain to give any ſudorific before that time, ſince nothing can be let out through the ſkin while it is inflamed. I do not venture to propoſe any of the more heating ſudorifics. When ſweat comes on, it ought to be very well attended to and ſupported; otherwiſe the event might be as unfortunate and fatal as with the boy of whom Mr. *Tiſſot* ſpeaks, c. 1. p. cviii.

When

When the patient is ſo far recovered that no more redneſs and fever is to be obſerved, and the appetite is reſtored, then it becomes neceſſary to him, 1. to keep within doors in moderate warm apartments for three weeks: 2. that his body be rubbed every morning and evening with a piece of woollen cloth which has been ſmoked with berries of juniper, maſtix, or the common fumigating powder: 3. to eat moderately: and 4. to take, every ſecond or third morning, any one of the purges frequently above mentioned; and, in caſe the urine will not go off freely, to drink an infuſion of toaſted juniper berries. If this does not ſufficiently increaſe the diſcharge, let there be added to this infuſion 15, 20, or 30 drops of *Eſſent. Scillæ Wirtenb.* and inſtead of a common ſoup he may eat one prepared with onions or of heps.

By this method we may prevent the dropſy generally dreaded to ſucceed this diſeaſe. But if it ſhould ariſe, which one may diſcover by the above-mentioned ſigns, we muſt oppoſe it immediately with efficacious remedies. Children of the poorer ſort may continue to uſe the infuſion of toaſted juniper berries, and, 2. every morning take in it the following powder:

℞ *Nitri Puriſſ. Cryſtall. gr.* L.
Rad. Scillæ leniſſ. ſiccat. gr. X,
Zingib. alb. gr. L.
M. f. pulvis Div. exactiſſ. in X *p. æq. D. S.*

Diſſolving and diuretic powders; of which one is to be taken at a time.

If it does not affect the patient much, or the child be ſtrong, then a half or a whole doſe may be taken again after two hours; and in this manner we continue each day till the ſwelling has diſappeared.

Children of richer parents may uſe, 1. the ſame powder (or *Vinum ſcillit. Pariſ.* a little tea-ſpoonful at a time) likewiſe for every day; but as their ſtomachs are generally more tender, we let them take the medicine in ſimple cinnamon water. If it nevertheleſs cauſes nauſea, we ſtop it by a ſpoonful of the ſame cinnamon water, which may be made ſtill a little ſtronger with ſome ſyrup of cinnamon. If the powder be not thrown up again, it will cauſe no further nauſea,

but

but operate within an hour in carrying off the water, either by the ordinary way or by the ſtools.

3. If the powder be taken in the forenoon, let them fetch from the ſhops the following *liquor reſolvens*, in order to take a tea-ſpoonful three or four times in the afternoon.

℞ *Flaved. Cort. Aurant.* ℥ij ß.
Vini Moſchani, ℥x.
Conquaſſentur, atque dum vinum ſaporem imbuerit aurantior. adde
Arcani Tartari, ℥ij ß.
Conquaſſando ſolve, & adde
Sacchari albi, ℥vj.
Conquaſſa donec & hoc ſolutum ſit; filtra.

It will commonly be too late to expect any cure, ſince fever and thirſt are likewiſe added to the ſwelling. But, as one ought not to leave a ſick perſon without aſſiſtance while he is alive, we may try if any thing can be effected by *Cremor Tartari*, taken to two, three, or four drachms a day.

When the ſwelling is removed, we endeavour to reſtore ſtrength to the body again by dry food, frictions, bark, and chalybeate wine; or, if the body is bound, we uſe *Tinctura Rhei Amara Edinb.* prepared with wine. How each of theſe remedies is to be adminiſtered is already laid down in ſeveral places of this work.

CHAP. XVII.

ON VOMITING.

VOmiting is often ſo gentle, that nothing is requiſite to ſtop it: ſometimes it is alſo ſalutary; and therefore we frequently find that colic and pains in the ſtomach ceaſe as ſoon as the patient vomits. Sometimes again it is of ſo long a duration, or makes ſuch frequent returns, or is ſo violent, that it ought to be looked upon as an important diſeaſe, requiring ſpeedy relief. I will here omit to mention what the body

body generally ſuffers in reſpect to nouriſhment, when the food taken is thrown up again, which muſt cauſe the blood to turn acrid when it is not refreſhed by a new ſupply. Theſe conſequences are not ſo ſoon obſerved, as the miſery one ſometimes finds children to labour under, when they, for inſtance, on the firſt days of the ſmall-pox or meaſles, are inceſſantly reaching day and night, and blood is at each time ruſhing out from the noſe, or coming up from the throat.

I will only obſerve, that vomiting, which children are ſubject to, is of many different ſpecies, according to the different cauſes it ariſes from, and their different ſeats.

The firſt ſort ariſes from diſtention, when a tender child ſucks too much. It then lies whining, is uneaſy, and cannot ſleep. As ſoon as it can throw up a little of the milk, it falls aſleep and is well again. To this cauſe likewiſe it is owing that older children get a pain in the ſtomach after haſtily eating or drinking too much, and thereby get a vomiting. In both theſe caſes we may conſider the vomiting as both the cauſe and the remedy itſelf; and in order to promote it, in caſe it will not go of its own accord, we may tickle the throat with a feather dipped in oil.

The ſecond ſort ariſes from cold. If a tender child is unſwadled, and its ſtomach expoſed to cold, it then immediately gets a hiccup, and when the nurſe ſuckles it in order to ſtop the hiccup, the child inſtantly vomits. This cauſe may be removed by applying a warm napkin.

The third ſpecies is cauſed by the ſtench of burning coals. I have frequently obſerved a child to be affected with a vomiting by the mephitic ſmell of burning charcoal; which however is ſoon relieved by removing the cauſe, and ſprinkling and fumigating the apartment with a little vinegar. If, in this circumſtance, we do not watch the nurſes narrowly, children will eaſily loſe their lives.

The fourth ſort ariſes from crudities in the ſtomach, which by degrees are collected there when children get into the pernicious cuſtom of eating too much, or have ſuch ſtrong and hard food to eat that their tender

der ſtomachs and bowels are not capable of digeſting it *.

Theſe either trouble by their quantity, or by the acrimony which they acquire in the ſtomach; (ſee the treatiſe on coughs) for vomiting, and coughing from the ſtomach, are known by the ſame ſigns, and cured in the ſame manner. In the ſame place you will alſo find the ſigns enumerated which indicate that ſuch crudities are actually in the ſtomach. It is likewiſe uſeful to know of what kind theſe crudities are. We ſhall generally find them to be ſour in ſucking children, as theſe live on milk only. But acidity alſo troubles older children, if they feed moſtly on diſhes of milk, freſh beer, ſometimes wine, or ſlily eat unripe fruit, or even that which is ripe, if they devour it in too great a quantity, as gooſeberries, cherries, and the like, or food ſeaſoned with much vinegar or juice of lemons. We diſcover the acidity of children by the ſour ſmell which they emit both from above and below; by their pale countenance; and in more tender children by their excrements being of a green colour, or mixed with ſmall curdled lumps. We may cure the acidity of tender children with the powder of oyſter-ſhells, or with my powder for children. [*Vid. Darelii Pharmacop*, for the pariſhes, p. 257. No. 90.] It is to be prepared thus: Magneſia half an ounce, carraway ſeeds three drachms, *radix violarum* half an ounce, and ſaffron half a drachm; which are all to be well pounded, mixed, and ground into a fine powder.

* The ingenious Doctor *F. C. Medicus*, pretends (*Obſerv.* Vol. II. p. 491.) that indigeſtion is the principal cauſe of convulſions in children. I believe nobody denies that indigeſtions may cauſe convulſions. But when the queſtion is, Why a child is more ſubject to convulſions than a full grown perſon? the anſwer will be obvious: Becauſe children have more ſenſible nerves. For if a nurſe is exaſperated, and gives the child to ſuck, ſhe will not thereby get any convulſions, but the child will be troubled with them. If a child is affected with acidity in the ſtomach, it will thereby be attacked with convulſions, but a full-grown perſon only receive a *Cardialgia*. See *Zimmerman von der Erfarung*, II. p. 564.

Of this we may give a couple of grains at a time in fennel-water, five or ſix times in a day, till the acidity is tempered, and the child gets reſt. Older children may be cured by the ſame, but they ought beſides to uſe ſome tincture of rhubarb which is prepared without ſugar: or they may uſe as a tea, rhubarb half a drachm cut in ſmall pieces, and two grains of cochineal; which being put into a tea-pot, pour on it three diſhes of boiling-hot water, and keep it on hot aſhes all night; then filter it, and mix with it a tea-ſpoonful of cinnamon water; of which the child muſt drink two diſhes immediately, and one diſh an hour after. In order to correct acidity, both in children and full-grown perſons, nothing will prove more efficacious than to diſſolve *(ſal tartari)* ſalt of tartar half an ounce in a pint of ſpring-water, of which a child of two years old, for inſtance, may take a tea-ſpoonful at a time, twice or thrice a day, in a tumbler of water: but the doſe for a full-grown perſon is a table ſpoonful taken in a large glaſs of freſh water. The acrimony which the food and drink acquires in a weak ſtomach may likewiſe be of a putrid or rotten kind, and ſhews that the child has eaten too much animal food. We diſcover this to be the caſe when a ſtink iſſues from its mouth like that from rotten eggs; which we cure with a little lemonade, or with ſmall powders of *cremor tartari* and *morſulæ citri*. We take, for inſtance, of *cremor tartari* ſix grains, and of the *morſulæ citri* twenty grains, making it into a powder. Two, three, or four of theſe may be given to the child in a day, till the ſtinking breath be corrected.

The above-mentioned crudities are ſometimes rancid, and it will always be the caſe when a perſon eats too fat and greaſy food, yolks of eggs, fat pancakes, butter and bread, or pork; and by this means it is diſcovered that the patient has lived on ſuch food. We relieve the diſorder with a little ſugar, or with the above-mentioned powder of *cremor tartari* and *morſulæ citri:* but tincture of rhubarb will afterwards become neceſſary, as otherwiſe a *(diarrhœa bilioſa)* bilious looſeneſs would follow. If the crudities only conſiſt of a tough ſlime, which is collected in the ſtomach when children feed moſtly on meal-pap, meal-groats, or bread which has

has not been well fermented, and what may have been prepared by theſe; by which their ſtomachs grow hard, are diſtended, and puffed up; then an emetic will become neceſſary to the cure, and after that the tincture of rhubarb.

Again if the food is thrown up, undigeſted, or without having undergone any change in the leaſt, it is a ſign that either the child has not chewed the victuals ſufficiently, or that they have been too hard, or the ſtomach too weak; this ought therefore to be ſtrengthened again, which as ſoon as the vomiting is over, may be done with ſome good ſtomachic *elixir*, for inſtance my *viſceral elixir*, from 15 to 20 drops a day in ſome weak cinnamon water; vomiting is beneficial in evacuating all theſe crudities or collections in the ſtomach, and ought not to be ſtopped, but promoted by drinking warm water, or taking an emetic in caſe it ſhould be thought neceſſary, in order that the ſtomach may be well cleanſed; for if that be neglected, the foulneſs enters the blood, and cauſes a fever, or it deſcends to the inteſtinal tube, and frequently cauſes a troubleſome *diarrhœa*, which often will not yield to any thing but an emetic.

The fifth ſpecies ariſes from *verdigreaſe* *. When the child's food is boiled and left to cool in a veſſel that is not well tinned, or if milk or whey or any thing of that kind which is intended for the child is left for ſome time in a braſs or copper veſſel, it grows ſouriſh, and corrodes the meat. Children who have ſwallowed any ſuch thing grow extremely ſick; and it is not long ſince I ſaw one that at firſt appeared to be already deceaſed, but it was however ſaved, when by great difficulty I at laſt got it to vomit by irritating its throat with my finger, and afterwards poured into it milk and oil. Here it will likewiſe be proper to mention that the vomiting which I have obſerved to ariſe from roaſted meat, which for a few hours had been kept on a ſilver plate: if for inſtance a roaſted fowl be put on a ſilver plate before the fire, in order to keep it warm, we ſhall find, after a few hours, a green ring on the plate

* See *V. Haller's Elem. Phyſiol.* vi. p. 216.

ſur-

ſurrounding the meat: this comes from the little copper contained in the ſilver, which is attacked by the ſalt of the butter with which the bird was roaſted, and conſequently the green appearance is nothing elſe than *verdigreaſe*. To this ſort belongs likewiſe that claſs of vomiting, which fried eggs cauſe when they have been kept on a pewter plate over night: that the white part of an egg attacks the pewter is plainly to be perceived by that black ſpot which it leaves on the plate when fried eggs have laid on it. The child is however lucky if it thereby be immediately brought to a puking: if not, we excite it, by tickling its throat with the finger or with a feather previouſly dipped in oil. The time will not allow us in ſuch circumſtances to get from the ſhops a thick emulſion of almonds, mixed with much oil, a little of an egg's yolk, or *mucilago gum. Arabici*. We ought to lay hold of what we can firſt get that may be proper on the occaſion; either milk-warm water with butter in it, ſweat cream or milk, with oil of olives in it, fat ſoups and ſuch like, and pour down the child's throat as much of theſe as poſſible. The poiſon will thereby be blunted, and loſes its power of irritating and corroding. All other things which otherwiſe uſually ſtop a vomiting, would here be hurtful.

The ſixth ſpecies is what attends the ſmall-pox and meaſles during the firſt period: we have already, *p.* 93, obſerved how that is to be relieved. When the meaſles were ſpread at *Stockholm* in the year 1760, the vomiting was one of the firſt ſymptoms which troubled the children; and I now recollect how hideouſly the children of a nobleman were taken ill of it, ſo that blood was preſſed through the throat; but they had immediate relief by the application of a poultice for the ſtomach, made of groats, ſtrewed with pounded mint, and wrapped up in a napkin.

The ſeventh is owing to a repelled ſcab, and is cured by expelling it again. See the Chapter on Convulſions and Coughs.

The eighth ſpecies frequently is obvious in children who are affected with worms, of which I will treat in a ſeparate chapter.

The ninth ariſes either from the hooping cough, cough from the ſtomach, or tickling cough. See the Chapter on Cough and Hooping Cough.

Now we will proceed to the tenth and moſt dangerous ſort, which is that painful vomiting which troubles children who are affected with a rupture when it is ſtrangulated, or whoſe bowels are ſhut up by any cauſe whatſoever, for inſtance, any irritating cauſe which has effected a conſtriction in them that no opening can be procured, by which means the *periſtaltic* motion is hindered from going downwards as uſually, but turns upwards, and empties or throws up by the mouth all that is found in the ſtomach and bowels, ſo that the patient neither can retain the food nor medicines. As this is attended with an intolerable pain, it excites a fever and an inflammation, often quickly bringing on a gangrene and death itſelf. Here a haſty relief is likewiſe required, for if the remedies are deferred till an inflammation has already taken place, then ſcarce any thing more will avail. The diſorder itſelf is in its own nature very ſerious; but the difficulty is in a great meaſure increaſed, ſince the remedies themſelves are thrown up.

If a rupture is the cauſe of the vomiting, the evil ought as ſoon as poſſible to be remedied; and though ruptures are of ſeveral kinds, nevertheleſs that part which has fallen out ought always to be returned, whether it be the guts or the *omentum*, not all at once, but gradually, firſt beginning with what has laſt fallen out, and laſt preſſing in that which firſt came out. We obſerve by this, that the patient is to lie in a poſition which prevents the rupture from preſſing by its ſpecific gravity on the opening it has fallen through. Before we try this, it is however frequently neceſſary firſt to bleed the patient, and inject ſeveral clyſters, which may be prepared of oat-gruel, a little oil, *oxymel* and *nitre* or *oxymel ſcilliticum*; and the tumor itſelf, and the place through which the rupture has happened, is to be ſoftened by moderately warm fomentations made of the heads of white poppies, mallow leaves, and bruiſed flax ſeeds boiled in milk, to which afterwards is added ſome good oil of olives. If the vomiting is a hindrance at the operation in returning the rupture, we ſtop it with

a ſixteenth, an eighth, or a fourth of a grain of *extractum Thebaicum*, which with a little ſugar is to be rubbed to a powder, or made into pills with ſome ſyrup, externally applying ſaffron bags. When the inteſtines are replaced, our care muſt be to procure a well-made bandage againſt the rupture, in order to prevent any further return of it.

But if we are convinced that the vomiting does not ariſe from the rupture, but the child complains of a violent pain in the lower part of the abdomen, rumbling winds in the bowels, and neither they nor excrements can be let down, notwithſtanding ſeveral clyſters have been injected, and the vomiting continues inceſſantly; we then find that ſome part of the inteſtines is ſhut up or contracted by ſome irritating cauſe, and conſequently that the dreadful diſeaſe called the *Miſerere* is at hand. In ſuch a caſe we ought firſt to bleed the patient, if any plethoric ſigns or the leaſt fever ſeems to require it; ſecondly, to continue to inject clyſters, ſometimes ſuch as is above-mentioned, but ſometimes prepared of the oil of olives only; and thirdly, to give the child a little of the *extractum Thebaicum*, in order that the vomiting may ceaſe for ſome hours, the patient may drink a tea of a half or whole, or of ſeveral ounces of the *folia ſennæ*, to which we have ſqueezed a little lemon juice. This is to be given in ſmall quantities but frequently, and after each time a piece of preſerved peel for to keep in the mouth, or any thing of that kind, which we know the child to be fond of. This being performed, we now place the child in a warm bath, in a manner that the ſteams are prevented from getting to its face, encouraging it to continue ſo for a long while, and likewiſe then to drink of the now mentioned tea; or if a vomiting again enſue, let it farther take one or two grains of the *antiſpaſmodic* pills. When the child cannot any longer ſit in the bath we muſt carry it to bed again, and cover the lower part of the abdomen with the above-mentioned fomentation of a moderate warmth; or if that ſhould fall too heavy, apply a flannel four times doubled, dipped in a decoction of mallow leaves and milk, and well ſqueezed out. When it is practicable again, the bathing muſt be repeated, continuing in this manner alter-

natively with the bathing and the fomentation, till the deſired effect be obtained.

I can never forget the very great uneaſineſs Profeſſor *Shulzenheim* and myſelf were in ſome years ago, when we had an only child of a noble family under our care, it being affected with this dreadful diſeaſe, and we under the neceſſity of concealing our apprehenſions, in order not to alarm the tender concern of the parents. It was however in the above manner evidently ſnatched away from the jaws of death. But it required one ounce and a half of the *folia ſennæ* before any ſtool could be effected. I only mention this caſe, as otherwiſe many a one might have thought our preſcribing, ſtopping and purging remedies at a time to be improper. But without the *extractum Thebaicum*, the tea would have been thrown up, and the ſpaſms not given way: and without the aſſiſtance of the bath and the fomentation, the tea would have been ineffectual in procuring a ſtool. Conſequently all that is preſcribed againſt a diſeaſe ought to aim at, and to be conducive to the ſame purpoſe, which is to remove the cauſe and all that may be an obſtacle to our intention*.

The eleventh ſpecies is cauſed by the emotions of the mind, as chiefly fear and ſudden fright: for by fear the force of the heart is diminiſhed ſo that it cannot drive the blood towards the ſurface of the body in a due quantity; the muſcles and ſphincters grow relaxed;

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* It did not then run into my thoughts to order linſeed oil, which I know to be recommended by ſeveral, even by Bar. *Van Swieten*, in Comment. ii. *p.* 147, and after that by Doctor *Galleſky*, in his *Abhandlung von der Darmgicht*. I cured a ſervant woman with oil of olives when linſeed oil was not at hand; I let her take a table ſpoonful at a time each hour, in barley gruel. The vomiting and the pain ceaſed immediately, and ſtools were effected afterwards. She was already bled before I ſaw her, and ſeveral clyſters and various ſorts of emollient fomentatious uſed to no purpoſe. Dr. *Matth. Bruckner* aſſures us, that a veſicatory of *cantharides* applied on the place where the pain is moſt acute, is an efficacious remedy aſcertained by his own experience. I find likewiſe that Mr. *De Haen* does not diſapprove of this. See *Ratio medendi* ix. *p.* 201.

therefore in ſuch a circumſtance we turn pale and anxious, the perſpiration ceaſes, and the pores are abſorbing moiſture; we tremble, and are ſubjected to vomiting or *diarrhœa*. But by ſudden fright the whole nervous ſyſtem is brought into diſorder, we may get ſpaſms, convulſions and epilepſies. The blood retires from the ſurface of the body, which is followed with anxiety and palpitation: we grow pale, all the natural evacuations commonly ceaſe, but in ſome perſons they increaſe. Every one therefore will eaſily obſerve, how dangerous it is to keep children in continual fear.

Parents and ſchool-maſters ought rather to live with children in ſuch a manner as to be looked upon by them as their beſt friends; and the deſire alone of pleaſing their tutors ſhould make children avoid all faults, except thoſe which are childiſh and wear off as they advance in years. We likewiſe find that it is ſtill more dangerous to frighten them ſuddenly with harſh words, diſguiſed perſons, ſtories of ghoſts and goblins, and ſuch like ſtuff. Beſides, it would be uſeful to uſe them early to ſee horſes, cattle, dogs, and to hear fire-arms, kettle-drums and the like, eſpecially as we in authors read ſeveral inſtances of children who by ſuch things have been frightened and got the *epilepſy*. See *Boerhaave's* Conſil. xxix. 11. *Ab. Heer*, obſ. 24. *Van Swieten*'s Comment. iii. 415. *Andree* on the *Epilepſy*, p. 15. *Schenckii* obſ. *p. m.* 100, and ſeveral others.

If a vomiting is brought on by fear, we encourage the child, and give it a little wine, or the *liquor cornu cervi ſuccinatus*, or a few drops of *balſamus vitæ*, or *ſpiritus lavendulæ compoſitus*, (palſy drops) on a piece of ſugar, or in a little cinnamon water, mint water, or wine.

But if the vomiting ariſes from the child's being frightened, then *paregoric* remedies ought to be given, not only for the ſake of ſtopping the pukings, but alſo in order to prevent more dangerous conſequences. It will prove moſt efficacious to ſpread *theriaca* on leather, and apply it on the ſtomach, and a warm napkin over that.

Internally we muſt give the *extractum Thebaicum*, according to the age, to a ſixteenth, one eighth, or one fourth of a grain, and a little well diſtilled water

of *rue*. But when the child is ſo weak that it cannot ſwallow any remedy, then we dip linen rags in warm *rheniſh* wine, and ſqueezing them, wrap the child up in them. When the child has recovered a little ſtrength we may give it a little *cornu cervi liquor ſuccinatus*, to be taken in ſome wine, and towards the night, a little of the *extractum Thebaicum*, made into a powder with a little ſugar *. Beſides, we muſt not neglect to encourage the child, and let it be entertained by thoſe perſons in the family that we know it loves moſt, letting it underſtand that it is now out of all danger. But if the child is ſo young that we can expect nothing by reflections, then one muſt play and amuſe it with ſuch things as it is uſually rejoiced at, or ſhew it ſuch things as pleaſe its eyes and ears, and engage its attention, that it forget what has happened. Afterwards we avoid to ſhew or let it hear for a long time of every thing that might recal to its memory the danger it has been in.

A coachman to a gentleman carried a child a year and a half old into the garden, in order to entertain it by looking at a young fole, but as he approached the mare itſelf too near, ſhe gave the man a kick that he tumbled down, being hit on the ſame arm which held the child. The child was by the kick and the fall frightened to ſuch a degree, that being immediately taken up, it was thought to be dead, for it had all the appearance of a dead corps, being cold, its eyes and mouth ſhut, the body relaxed, and the pulſe not to be perceived. It was put into a bed and wrapped up immediately in linen dipped in warm *rheniſh* wine, and then ſqueezed out. A full hour being elapſed, the child began to come to itſelf again, ſhrieking hideouſly immediately after it got the liquor *C. C. Succinat.* in *rheniſh* wine, and ſlept after that ſix hours running, and fell into a profuſe ſweating. In a few days it was tolerably well recovered, but ſoon after was affected with a tedious *diarrhœa*, which did not ceaſe until I preſcribed chalybeat wine to be taken every day in

* Theſe powders will eaſily ſlip down the throat, if given in *Syrupus Hordeatus*.

cinnamon

cinnamon water. Notwithſtanding the tender age of the child, it nevertheleſs retained an averſion and dread of the door towards the yard, ſo that it trembled on being carried towards that ſide, for it was juſt cloſe to that place where the fall happened.

When children are affected with any pain in the ſtomach, or vomiting, old women commonly think it ariſes from the little cartilage annexed under the breaſt bone (*Cartilago Xiphoidea*) being depreſſed, and therefore officiouſly offer to ſuck it up by their dry cupping. Vomiting in this caſe may ſometimes happen to full-grown perſons, in whom the cartilage is already oſſified, and by ſome accident depreſſed, and conſequently the cupping is conducive to the cure *. But as for children, this circumſtance will never happen, for their (*epiphyſis Xiphoidea*) is ſtill an elaſtic cartilage, which retakes its former ſituation the ſame moment it ſhould happen to be preſſed inwards.

CHAP. XVIII.

On the COUGH *of* CHILDREN.

EVERY thing which irritates the *aſpera arteria*, and its nerves, will effect a coughing; either the irritating cauſe touches it mediately or immediately. In the former caſe it has its ſeat either in the windpipe, or within the breaſt, or in ſome other part, the nerves of which communicate with thoſe of the *aſpera arteria*; and this is the true reaſon that a remedy is conducive in one kind of cough, but in another is without efficacy, but on the contrary may prove hurtful †.

I will firſt mention that ſort of cough which is moſt obvious in children, the irritating cauſe of which has

* Confer *Element. Phyſiol.* by Baron *Haller*, iii. *p.* 15.

† Confer with the *Elem. Phyſiol.* of Baron *Haller*, iii. *p.* 300. Cough is the ſame to the breaſt as ſneezing is to the noſe.

its ſeat in the ſtomach, from whence it has got the name of the ſtomachic cough.

Children ſeldom eat with moderation, but they guttle all that we give them, or as the ſaying is, their meals laſt from morning to night; and their food commonly is ſuch as will eaſily grow ſour, or of a kind which turns clammy; for inſtance, as meal pap, meal gruel, bread which is not well fermented, &c. Therefore their ſtomach will not be capable of digeſting or changing it as it ought.

From hence ariſe collections and crudities (*ſaburra cruda*) in their ſtomach, which puff it up large and hard, cauſing ſleepineſs, a pulſation on the temples, head-ach, heavy breathing, a diſguſt for food, and frequently a vomiting. Theſe crudities do not remain a long time in the ſtomach before they bring on an acrimony, and when this irritates the nerves of the ſtomach, the irritation is propagated or communicated to the breaſt, and cauſes this ſort of cough. The lungs are then excited to coughing in the ſame manner as the reachings are excited when we are affected with the cholic or the gravel. This ſtomachic cough is eaſily known by the child's having a ſtinking breath, a foul tongue, diſtended ſtomach, and diſguſt for food: alſo that the coughing chiefly comes after eating, and a tickling or pain is felt at the orifice of the ſtomach a little time before the coughing comes on; beſides, it being finiſhed ſometimes by a vomit, after which the patient gets a longer reſt. We may likewiſe order the child to hold its breath for a little while, and if that excites coughing, it is a proof that the irritating cauſe has its ſeat in the breaſt or lungs only, and not in the ſtomach. It is eaſily diſtinguiſhed from the hooping cough, as that is worſe every other day, and ſcarce permits the patient to draw breath during the fit, but continues till the patient is quite ſpent, or vomits. The latter is beſides epidemical, which does not at all belong to the ſtomachic cough.

By what has already been ſaid, it plainly follows that pectoral juices and common pectoral remedies, are rather injurious than conducive in the ſtomachic cough, for all that weakens the ſtomach increaſes alſo the crudities, and conſequently the coughing; on the contrary,

trary it will be eaſily and quickly cured with gentle emetics; with how much ſafety theſe may be taken even by tender children, is already explained in the chapter on the meaſles. If a looſeneſs ſhould not follow of its own accord a few hours after the vomiting, then we ought to inject a clyſter of a little milk, oil and ſugar. The ſame remedy may be uſed ſome days running, by which means we are ſure to ſtop the coughing, eſpecially if afterwards we give the child a moderate quantity of food, putting the ſtomach in order by ſome ſtomachic elixir, or with a few grains, each day, of a very ſubtle powder prepared from the leaves of mint, with an equal portion of ſugar.

Children are likewiſe ſubject to another ſort of cough called the catarrhal cough. This they may contract by cold, as for inſtance, when we take them with us on journies in autumn or winter, or otherwiſe ſuffer them to be expoſed to a chilly air, to run into places where they get wet, or play with the ſnow, &c. Or they will contract this cough by being leſs warm than uſual, for inſtance, if their bed or cradle ſtands too near the fire-place: for if the child is taken from thence, and a little after that is kept nearer to the window, it will immediately get a catarrh and cough. The ſame will happen if it be ſuckled by the mother or the nurſe who is lately come out of the cold. The child is alſo ſubject to catch cold if it be allowed to remain in the open air late in the evening during the ſummer, when the heat is great in the day-time, and the nights are cold.

The cauſe will be underſtood from the following deſcription: The windpipes and lungs are provided with innumerable ſmall pores, through which a ſubtle ſteam is continually exhaled. We may ſee how theſe vapours are collected by breathing on a bright looking-glaſs. They are ſo copious in a healthy perſon, that when, for inſtance, eleven ounces are perſpired from the ſurface of the whole body, twenty-two ounces, which is double the quantity, will exhale by the lungs. We ſee therefore how much thoſe are miſtaken who expoſe themſelves to the cold when they are affected with a cough, thinking themſelves well preſerved provided they are thick clothed. It is true that the body

itſelf

itſelf is thereby ſecured, but the lungs are equally expoſed to the cold air. But, beſides theſe pores, the windpipe is alſo provided with a great number of ſmall glands, which through their minute orifices diſcharge a fine thin glue or ſlime, which, lubricating the *aſpera arteria*, makes it ſmooth on the inſide, preſerving by thoſe means its nervous membrane from feeling or ſuffering any thing from duſt and the like. Now when a conſtriction is effected in theſe orifices of the glands and exhaling veſſels, either by cold or warmth, then the effort itſelf, of the matter which is ſhut up, cauſes an irritation; the membrane of the *aſpera arteria* loſes its above-mentioned defence, and the perſpirable matter, which is now ſhut up or confined in theſe parts, becomes acrid, in the ſame manner as we very well know it to be the caſe in a catarrh of the noſe, the inſide of which frequently will be excoriated, as alſo the ſkin under it grows reddiſh. Now the irritation, which the above-mentioned circumſtances occaſion, is the very cauſe of this ſort of cough, which is eaſily known becauſe it ariſes from cold, and is attended with a catarrh of the noſe, ſneezing, as alſo pretty frequently with a ſore throat, and becauſe it is moſt difficult towards night.

The matter which is hawked up at the beginning of the diſeaſe is thin, and the coughing will certainly not ceaſe while it continues in this ſtate, notwithſtanding it ſhould be ever ſo copious. But when it acquires a thicker conſiſtence, becoming firmer and yellow, and is hawked up with eaſe, the diſtemper will ſoon go away.

This ſort of cough is not very dangerous in its kind. But if it be ſlighted, and ſuffered to remain a long time, the matter will acquire a higher degree of acrimony and excoriate the throat, nay it may even cauſe a conſumption. When the coughing is very violent, it may, beſides the other inconveniences, cauſe an *hæmoptyſis*, which in that caſe ought to be prevented by bleeding. However that will ſeldom be required for children, as their fibres are more ſmooth, ſoft, and relaxed, and therefore do not ſo eaſily burſt.

When the diſorder is ſtill in its beginning, we ſhall frequently be able to ſtop it immediately, by confining the

the child to a warm room, likewiſe by warming its cradle or bed, and fumigating it with ſugar, and letting the nurſe drink tea with aniſe and fennel ſeeds in it: we give this tea to the child itſelf, in caſe it is already weaned, or we may prevail on it to drink warm whey copiouſly, ſo that it falls into a profuſe perſpiration.

This will not be ſufficient, in caſe the cough has already laſted for ſome days. The ſureſt and beſt cure is then to let the child take, 1. a gentle purge every morning, or every other morning, agreeable to its ſtrength and age. We may, for inſtance, chuſe for that purpoſe manna, from two to three or four drachms, diſſolved in a pint or more of whey, or we may fetch from the ſhops, one, two, three, or four grains of the *electuarium lenitivum*, prepared according to the Pharmacop. of *Edinb.* for that will keep a longer time than the *Elect. lenit. Lond.* this is alſo to be diſſolved in whey and taken. If the doſe mentioned is found too ſmall, it may be increaſed the next time.

2. In the afternoon let them drink a little almond-milk, thin and well-ſtrained; or warm whey, thin and well-ſtrained barley-gruels, turnep-juice, or tea with milk. And,

3. Continue to give them ſome paregoric remedy every night, in order to give them reſt, till the matter grows thick and ripens. For inſtance, we may mix together *extracti thebaici* one grain, *cort. rad. ipecacuanhæ* two grains, and ſeventeen grains of ſugar, rubbing it well, and dividing it into four equal parts; and if that doſe over night is not ſufficient to ſtop the cough, then the quantity may be increaſed the next evening.

But if the child is not troubled with coughing in the night-time, this remedy will become unneceſſary; otherwiſe it is indiſpenſable. For by continual coughing the thin part of the ſerum (*lympha*) would be preſſed out through the pores, which are not yet quite ſhut, and ſo coughed up, although this liquid is neceſſary to ſoften and relax the above-mentioned orifices, as alſo to dilute the ſlime, and to ripen it, in order that it may get into the *aſpera arteria*, and then be hawked up with eaſe.

This

This ſpecies of coughing will ſtill ſooner give way if the child is alſo kept within doors, eſpecially in a warm bed, and is anointed with goats tallow under the feet, warming them all the time over coals. Alſo it muſt drink freely, and eat food which is eaſy of digeſtion, avoiding every thing ſour and ſalt.

A hoarſeneſs will ariſe from the ſame cauſe, that is to ſay, when the upper part of the *aſpera arteria* becomes dry. And that happens when the above-mentioned mucus and the exhalation is ſhut up, and conſequently cannot lubricate the wind-pipes. It is ſhut up when a conſtriction is cauſed in the aforeſaid orifices by means of a ſudden change from warmth to cold, or is choaked up as it were; which happens in the ſmall-pox, meaſles, and *aphthæ*; or if the natural ſlime is made too thick by heating liquors, ſour things, or from certain diſeaſes. Therefore we find that drunkards are commonly hoarſe. Or if the coughing is ſo frequent that the before-mentioned *mucus* is exhauſted before it can be recruited again. For which reaſon people labouring under conſumptions are generally hoarſe.

Here we ought likewiſe to take notice of the tickling cough, *(tuſſis titillatoria, toux gouttorale)* which has its ſeat in the *aſpera arteria*, where a tickling is felt which irritates the coughing and vomiting. This may be cured in the manner above preſcribed, or by taking a tea-ſpoonful at a time of the *electuarium zingiberis*, which is compounded of a table ſpoonful of clarified honey mixed with fine and well-ſifted powder of ginger-root to the quantity of a tea ſpoonful. However the ſyrup of ginger is ſtill better and more palatable, or elſe the juice of preſerved ginger-root. I have likewiſe tried the *ſuccus hyoſcyami*, or juice of henbane, to the amount of a few grains, which immediately cured this ſort of coughing.

Children are ſubject to another kind of cough, which ariſes from a repelled ſcab. This is ſo much the more dangerous as it corrodes and affects the breaſt in the ſame manner as it uſually does the ſurface of the body, and may therefore eaſily cauſe a conſumption, or even death itſelf, if proper remedies be not timely applied. This cough does not yield to the

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uſual pectoral remedies, but the only thing ſerviceable is to expel the ſcab again by all poſſible means. Therefore, after having cleanſed the ſtomach and bowels, in caſe it is judged neceſſary, by any one of the above-mentioned purges, we confine the child to a warm bed, and give it a few grains of the *flores ſulphuris* to be taken in a little warm milk, giving it to drink after that a tea of *flores ulmariæ*, with or without milk, until it comes into a good ſweat, which we muſt ſupport during a few hours by the above-mentioned tea.

This we continue trying for ſome days running, and if the ſcab then intirely breaks out, the cure is performed; but if not, then we are obliged to apply a ſinapiſm or a veſicatory to the place where the ſcab has been moſt copious [that which is prepared according to the *Pharmacop. Lond.* is the beſt], and as ſoon as it begins to take effect, or to bliſter, we muſt give the child a tea-ſpoonful at a time of the *Julapium e Moſcho Lond.* till it occaſions a ſweat. Or we may give it ſome pills prepared, for inſtance, of three grains of muſk, one grain of camphire, and a little ſyrup *de baccis Norlandicis*, ordering it to drink the beforementioned tea after it. If this ſhould alſo, contrary to all expectation, prove inſufficient, then we ſhall be obliged to preſcribe four or five grains of *æthiops antimonialis*, to be taken either in wafers, or mixed with ſome ſyrup, drinking the ſaid tea after it. If the coughing be very violent, it muſt be palliated in the interim by any one of the remedies which were mentioned as paregorics in the catarrhal cough under No. 3. eſpecially as we may give them here with much leſs riſk, becauſe the matter is of ſuch a nature that it cannot be hawked up, but requires an iſſue through the ſurface of the ſkin *.

* Compare this with what I have written of convulſions, p. 36. To this belongs likewiſe that violent cough which is deſcribed by Dr. *Zimmerman* in the *Acta* of *Zurich*, II. p. 398. He found it to ariſe from knots or indurations on the child's neck, which on diſappearing from thence attacked the lungs. It yielded only to the above-mentioned remedies.

On

On this occaſion I think it proper to mention how we may more eaſily allure children to ſwallow medicines in wafers. We muſt, for inſtance, handle wafers and pounded ſugar in the preſence of children, without ſaying for what intention. Probably they will then aſk for ſugar. We give them a little in order to quiet them, in the mean time wetting the wafer, and wrapping up ſome ſugar in it, ſo that the child may be induced to ſwallow it for the ſake of the ſugar. If we continue them for a few mornings running, the child will be accuſtomed to ſwallow ſuch wafers or boluſes, and after that is eaſily prevailed on to take medicines in that form when neceſſary.

The ſorts of cough which are ſymptoms in other diſeaſes, as dentition, the *aphtæ*, ſmall-pox, meaſles, and worms, are treated of in the ſame chapters as their principal diſeaſes.

CHAP. XIX.

On the HOOPING-COUGH *or* CHINCOUGH.

THE hooping-cough, like the ſmall-pox, meaſles, and the venereal diſeaſe, never appeared in Europe originally, but was tranſported thither from other parts of the world by means of merchandiſe, ſea-men, and animals: it was a new diſeaſe to our anceſtors in Europe, and probably was conveyed to them either from Africa or the Eaſt-Indies, where it was rooted before *.

* Profeſſor *Mathiæ*, in his Diſſertation *de tuſſi convulſivâ Infantum*, 1768, looks upon the chincough only as a high degree of catarrhal cough. I have read his arguments no where elſe than in the *Gottingiſche Anztigen* (Literary Gazette of Gottingen), in which they were oppoſed, according to my judgment, with very good and ſufficient objections. And this is done with all the modeſty and regard which ought to be obſerved towards ſo learned a man.

Its

Its firſt appearance in *Sweden* cannot be determined with any certainty; but in *France* it began in the year 1414.

From hence it plainly follows that it does not ariſe from any hereditary fault, or any acrimony diſtilled from the head, or from any ſlime in the ſtomach. For in that caſe it would have affected our anceſtors as well as the people of the preſent age. Conſequently the quantity of ſlime, which is vomited up by children in the hooping-cough, is not the cauſe of the diſorder, but ought, in my opinion, to be looked upon as an effect of the true cauſe, irritating the glands, which makes the diſcharge of ſlime more copious, for the ſame reaſon as the bladder preſſes out a greater quantity of mucus when it is irritated by the ſtone. For it appears as improbable to me, that the mucus or ſlime, which is preſſed out by means of the irritation of the ſtone in the bladder, ſhould be the cauſe of the pain felt by a patient afflicted with the gravel, as that the ſlime vomited in the chincough ſhould be the cauſe of that diſtemper.

It is likewiſe obſervable that the hooping-cough always appears as an epidemical diſeaſe. I think its nature is eaſily to be underſtood, ſince I have many times plainly perceived it to be contagious, and that it infects only ſuch children who have not yet had it. Therefore it infects in the ſame manner as the meaſles or ſmall-pox. I knew the hooping-cough conveyed from a patient to two other children in a different houſe by means of an emiſſary. I have even myſelf carried it from one houſe to another undeſignedly.

A perſon who has once had the hooping-cough is as ſecure from the danger of catching that diſorder again as thoſe who have had the ſmall-pox and meaſles are with regard to thoſe reſpective diſeaſes. During my practice I never found or heard of any one who has been infected with the hooping-cough more than once. Dr. *Hillary* has made the ſame obſervation in his book on the air and the diſeaſes at *Barbadoes*, p. 45. Dr. *Kirkpatrick* likewiſe agrees to the ſame in the ſecond edition of his Analyſis, p. 64. *.

It

* They may however get a return of the ſame diſeaſe, and

It is true indeed that a child, who had had the chincough, was afterwards affected with a very violent cough, during the firſt period of the meaſles, which ſounded very much like the hooping-cough, each fit terminating in a vomit; but it was not worſe every ſecond day, which is however the true and eſſential ſign of a hooping-cough. This cough diſappeared as ſoon as the meaſles were well come out.

The hooping cough is ſometimes attended with a fever, and ſometimes without any perceptible one; but as long as it is not put out of its order by improper remedies or any other accident *, it will always be found worſe every ſecond day. The patients commonly feel cold on the ſmaller part of their legs.

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and fall in again, as it happens in intermittent fevers. And Dr. *Morris* has obſerved, that children, who had the hooping cough in the autumn, fell into the ſame diſeaſe again the next ſpring: ſee the *Medical Obſ.* by a ſociety of phyſicians in *London*, Vol. III. p. 281. for the cauſe of the diſeaſe had not been intirely removed, altered, or evacuated. In the year 1769 the chincough was ſpread through different parts of *Sweden*, and was of the ſevereſt ſort I ever had ſeen. A child in its fourth year was then infected by the diſeaſe. When it had continued for ſome time, the child unexpectedly was ſeized by a quotidian ague, attended with cold, heat, and ſweating for ſome days together. On thoſe days the coughing ceaſed; but when the ague diſappeared, the hooping-cough re-appeared with equal violence: the child bled often through the noſe, and it likewiſe loſt a great deal of blood from ſome blood-veſſel or other burſting on both ſides of the noſe. No venæſection was performed at the beginning of the diſeaſe. After the diſorder had continued for ſome weeks, the child was affected with troubleſome eruptions about the groin, but the cough was not thereby relieved. The eruption continued likewiſe after the hooping-cough was cured, and did not go away till a boil ſettled in the *perinæum*, which ripened, was opened, and was cured as uſual. Another child could not be prevented, during the chincough, from ſcratching itſelf between the root of its noſe and its right eyebrow, till a hole was made thereby which turned into an ulcer, but the cough continued with equal violence.

* See the obſervations of Doctor *Blom* and *Faxe* in the narrative to *Colleg. Med.* 1769, *p.* 11 and 250.

It comes on only by degrees, and is at firſt dry, but when it has continued ten or twelve days, it turns humid, and the matter which is then coughed up looks ripe; nevertheleſs it increaſes more and more, leaving long intervals; the fits return at certain hours, but continue at each time with ſuch violence and for ſo long a time, that the child grows blue in the face, its eyes look as if they were forced out, and they run beſides, and a bleeding of the noſe is ſometimes brought on; it coughs till it is quite out of breath, that one is in apprehenſion of its being choaked; for if the patient now and then is capable of drawing ſome breath, it is with a ſounding which very much indicates with what difficulty the lungs can admit the air. The coughing continues, and does not leave off for that time, till the child vomits up a quantity of ſlime. If at any time the coughing ſhould intermit without the paroxyſm being ended with a vomiting, it will immediately return again, and will not ceaſe but after a vomiting. If the paroxyſm happens to come on immediately after the child has taken nouriſhment, it will grow blue in the face, ſtumble, and be ſtifled if one does not quickly excite vomiting by irritating its throat with a finger. Therefore ſuch patients ſhould not be left alone by themſelves, but be attended by a ſenſible perſon who has a preſence of mind, and who will beſides be of ſervice in preventing them from hurting themſelves, for they will generally tumble down during the fit. However, they commonly lay hold of ſomething when the coughing ſeizes them, for inſtance a chair or table, keeping it faſt with all their ſtrength, whilſt they during that time are ſtamping with their feet. The chincough is called *Coqueluche* in *France*, becauſe they formerly thought it to ariſe from a running of the head, and that it was to be cured by keeping the head warm by a cap. We have not received any particular name for the chincough from the ancient Romans and Greeks, as it was not then known to them.

Conſequently the true cauſe of this diſeaſe muſt be ſome heterogeneous matter or ſeed, which has a multiplicative power, as is the caſe with the ſmall-pox, and that it only affects children who have not been infected with the diſeaſe before. Whether this multiplicative

miaſma be a kind of inſects, I cannot affirm with any certainty; however we find that it is communicated by infection, and that a part of it is attracted by the breath down into the lungs; but the greater part of it is ſwallowed with the *ſaliva*, and comes down into the ſtomach. On both theſe places, eſpecially on the latter, it irritates and gnaws the nerves for ſome hours, and again it is quiet at certain hours, nay ſometimes for half part of the day; this irritation excites, and by means of the communication of the nerves, (*conſenſus nervorum*) cauſes ſuch a convulſive coughing, whoſe paroxyſm does not ceaſe before the moſt vivid and active part of the mentioned ſeed or *miaſma* is thrown up by vomiting, but will not intirely leave off to trouble the patient until it is deſtroyed, rendered ineffectual, or expelled out of the body. From hence it follows, that for the cure of the hooping-cough, ſuch remedies are required as will kill the ſeed, and render it inactive, or ſuch as expel it out of the body the ſooneſt.

It is worth our while to take this into conſideration; for the diſeaſe is both tedious and ſevere. When it is left to the courſe of nature alone to be worked out, it commonly will laſt eleven or twelve weeks, nay frequently half a year. What is ſtill worſe, the diſeaſe is very dangerous and often fatal *. A number of patients are ſtifled by it, getting convulſions and apoplexies, others pine away entirely, others again are puffed up by it and die. Beſides a great number contract ruptures hereby, or become deformed.

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* From the bills of mortality and accounts kept on the mortality of certain diſeaſes, we find in the courſe of ſixteen years, (counting from 1749, till the year 1764, theſe years included) 43,393 children to have loſt their lives by the hooping cough, which amounts to 2712 children dead each year. In the year 1755, 5832 children were carried off by this diſtemper; but in years when it has raged with leſs fatality, about 1700 or 2000 children are loſt by it. Of the abovementioned 43,393 children were 21,543 males, and 21,850 females. Conſequently the hooping cough has proved a little more fatal to the weaker ſex.

It is eaſily prevented by avoiding the infection as much as poſſible when it is ſpread in the neighbourhood: for it is moſt probable that the hooping cough always is raging in ſome part or other of the kingdom, and is conveyed and circulates from one place to another by travellers, or lies concealed for certain times in cloth and merchandizes, as the infection of the ſmall-pox does.

The cure might eaſily be obtained if we knew any remedy which had a ſpecific power of killing this ſeed or making it inactive. The leaves of the wild roſemary (*Sedum paluſtre Linn. folia roriſmarini Sylveſtris pharmacop.*) operate probably upon this principle when uſed copiouſly as tea. *Archiater V. Linne* mentions, in his travels to *Veſtrogothia*, that the common people in that province cure their children of the chin-cough ſucceſsfully with this remedy. Moſt likely muſk acts, and is effectual in this diſeaſe upon the ſame principle. I find in fact that the Engliſh writers give it great commendations as ſuch, for inſtance, Doctor *Fuller* in his *Pharmacopœia extemporanea*, *p.* 111, 206. Thoſe who chuſe to try this remedy, may preſcribe for inſtance the *Julep. e Moſcho Lond.* ſix ounces, and give the child a ſpoonful of it at a time in the intervals of the paroxyſms, more or leſs frequently, according as the intervals are longer or ſhorter. I have not yet had any opportunity to try this remedy in the hooping cough, but as I have found its good effect in other diſtempers which have ſome relation with this, it makes me pretty certain that it may be uſed without any riſk, and to all appearance to advantage. It is to be wiſhed that phyſicians would try ſeveral other remedies which kill inſects, and which we know are effectual in *exanthematic* fevers. Laſt year, 1770, ſeal's fat began to be uſed againſt the chin-cough; half an ounce was boiled in a pint of milk for a quarter of an hour. Of this milk was given a table ſpoonful morning and night to children at the age of a year or half a year, giving more in proportion to thoſe who were older. It is aſſured that the worſt ſymptoms (as the child being out of breath and nearly ſtifled) went off within eight days, but the coughing continued for a longer time. This however was likewiſe afterwards cured with a few drops

of tar mixed with the yolk of an egg. See the news-paper from the provinces for the year 1770, No. 24, and the cases the Society of Surgeons have published in *Stockholm*, year 1769, in which Mr. *J. B. Brandt*, *p.* 105, confirms it from experience, and pretends that its salutary effect had been observed from the first day it was given. Doctor *Morris* prescribes the bark and the *castoreum* against this disease: he mentions likewise that he had heard of children being cured within nine or ten days by the peculiar rank stench which comes from a goat or a fox. See ch. i. *p.* 281. I have good reasons to expect that we soon will learn which of these remedies is the most effectual, and that consequently the hooping cough will be rubbed off the list of the severer diseases. I know, pills of the extract of tobacco have frequently cured other convulsive coughs, but I have not yet had an opportunity of trying it in the hooping cough, nor the *naphta nitri* and *spiritus æthereus Frobenii*, both of which I find to be much extolled.

The other method of curing the hooping cough consists in expelling out of the body, by means of gentle emetics, that *miasma* which I look upon to be the true cause of the disease. Assessor *Strandberg* cures his patients in that manner, and has given a succinct description of it in the Acta of the Royal Acad. of Sciences for the year 1749, *p.* 251. The same method is also recommended by Assessor *Bergstral* in the news-paper of the Sciences, 1752, No. 40. An old *French* physician named *Basseville*, never wanted to have recourse to any other remedy than emetics in curing the hooping cough, which his son mentions in a dissertation published in the year 1752 at *Paris*.

An unexperienced person will think it daring to give emetics to children, but they can bear them better than full grown persons. I allow that the nerves of children are more sensible and tender, but the dose of the emetic may be moderated accordingly. Their solid parts are soft, supple, and easily relaxed; abundance of humours are in their body, consequently they can vomit without danger. The surest remedy to effect vomiting, is the *cortex radicis ipecacuanhæ*; it is to be given on the hours the child is better, and in the same manner as we have advised in the Chapter on the Measles. If the first and

second

ſecond doſe of it ſhould not have a ſufficient effect, we muſt give a third. For ſome patients a few doſes will be ſufficient. We are able to direct the effect of the remedy according as we chuſe, by the giving it in this manner: inſtead of *Ipecacuanha*, we may order for the ſame purpoſe the *ſulphur. auratum Antimonii tertiæ præcipitationis* or *kermes minerale*, the *emetic tartar*, or *Huxham's* eſſence of *antimony*, or the *vinum emeticum:* it is indifferent which of theſe we employ. The doſe may differ a little according as they contain a little more or leſs of the reguline part of antimony. For inſtance, we may take a grain of *emetic tartar*, and rub it into a ſubtile powder, together with thirty-two grains of ſugar, dividing it into eight equal parts. One of theſe is to be given every day to the child in a little water or milk, at thoſe hours when it is better. The child will not ſuſpect this to be a medicine, becauſe it taſtes ſweet, and does not change the colour of the milk. If one doſe ſhould not operate ſufficiently, then we may give another a quarter of an hour after, juſt in the ſame manner as with the *Ipecacuanha*. Compare this with what Doctor *Fothergill* obſerves in the *Med. Obſ.* Vol. III. p. 319. When the *emetic* begins to operate, the child muſt have ſomething to drink, that it likes moſt. In this manner we continue till the coughing yields. We may either increaſe or diminiſh the doſes, according as we find them operate more or leſs.

If the hooping cough has already turned irregular, ſo that it is not remarkably better the one day than the other, then we muſt begin to give the *emetic* as ſoon as the child begins to recover a little, after the paroxyſm is over. If it be plethoric, and liable to *hæmorrhages* at the noſe during the fits, it ought to be bled before-hand. If the body of the child be bound, we may inject a clyſter or give a little rhubarb. In caſe it has been ſick for ſome time, it being already weakened by that, ſo that we cannot venture to give it an *emetic*, then we may, according to the advice of Doctor *Strandberg*, let it take the bark alone, or let it drink mares milk at the ſame time.

The ſigns of recovery are 1ſt, an abatement of the fever; 2d, the breathing becomes more eaſy; 3d, the intervals between the fits of coughing are longer.

If the child has already gotten a rupture, the abdominal contents, which are fallen out, ought immediately to be replaced, and prevented from coming out again, applying proper compreſſes, till further aſſiſtance can be procured by a truſs.

CHAP. XX.

ON THE JAUNDICE.

ALTHOUGH the jaundice (*Icterus*) is one of the diſeaſes to which perſons of all ages are ſubject, nevertheleſs it is looked upon as deſerving a place among the diſeaſes of children, becauſe it frequently affects them; nay even during their tender age *. However it is not ſo common to thoſe of *Sweden*, as in other countries, probably becauſe it is there a cuſtom univerſally received, even amongſt the common people, to give new-born children manna ſugar, in order to purge them well from viſcid ſlime and the *meconium*.

As to the cauſes of the jaundice, we ſhall find them to be ſuch which effect a ſtoppage in the channels that carry the gall or bile from the liver, the *pori biliarii ductus Hepaticus*, *ductus Choledochus*, or its opening into the firſt of the ſmall inteſtines (*duodenum*), ſo that the bile is prevented from being freely diſcharged in the mentioned *duodenum* †. Therefore ſlime and glutinous liquids

* I have not ſeen children born with the jaundice, but find inſtances of it related in *A. N. Curioſ. Dec.* i. *A.* vi. *Obſ.* 241. *Dec* iii. *A.* ii. *Obſ.* 40. *Fr. Delabœ Sylvius*, *Prax. Med. Libr.* i. *Cap.* 46. No. xi. p. 302. *Theod. Kerkring Spicil. Obſ.* 57. p. 118.

† The gall bladder, its channel (*ductus cyſticus*) and ſtones of the gall-bladder, do not cauſe a jaundice, unleſs they are retained in the *ductus cholidochus*, and ſhut up that paſſage; this is demonſtrated in a *Diſſertation de Ictero*, p. 38 and 39, ſpoken at *Upſal* by Doctor *Bjur*. Six angulated ſtones were found in the gall-bladder of the late King *Frederick*, three of which were larger, and three ſmaller; notwithſtanding

liquids may cauſe the jaundice in new-born children, by ſhutting up this opening, which will ſo much the more eaſily happen, as the great common biliary channel (*ductus choledochus*) goes a little way between the membranes of the *duodenum* before it opens into it (*lumine obliquo*) with an oblique aperture.

When children have ſucked, and the milk becomes curdled by acidity, the mentioned aperture may then be obſtructed by the ſmall lumps of this coagulated food. The ſame may likewiſe happen to them if they feed on milk pap. A jaundice will likewiſe ariſe from conſtrictions which are cauſed by gripes in the *duodenum*, and the aperture of the *cholidochus* into it *.

When a child is weaned, and now lives on other food, this may cauſe crudities, either by being devoured in too great a quantity, or too little chewed, or of too hard and crude a quality, for inſtance as unripe fruit, in which caſe the collections and crudities will either by their quantity and hardneſs preſs and obſtruct the biliary aperture in the *duodenum*, or irritate it to a conſtriction. In each of theſe circumſtances, the natural diſcharge of the bile is prevented.

It alſo frequently happens that children get affected with a jaundice, when by ſome means or other they have had a ſevere vomiting, or have taken a ſtrong purge given by an ignorant perſon, or if worms torment and gripe them ſeverely. In all theſe circumſtances the jaundice will firſt ariſe when the pain is ſpread further in the ſtomach and bowels, ſo that it reaches even the *duodenum* and the aperture of the *cholidochus* into it, cauſing them to be ſhut up by conſtrictions.

ſtanding this, his Royal Majeſty had never had the jaundice, or was in the leaſt affected by it. Dr. *V. Haller*, who has made ſo many diſſections, has never found ſtones in the gall-bladder of children. *Vide opuſc. Patholog.* iii. p. 325. confer p. 328, and the following.

* I have obſerved children to grow yellow in the face on ſucking the mother or nurſe after their being exaſperated. But whether they thereby get a true jaundice or not, I have not found. See p. 34.

Intermittent fevers of long duration, agues, or irregular cold fevers, will frequently leave a difficult jaundice behind them, eſpecially if the child has had ſeveral relapſes of the ague, and it has been attended with much vomiting, or the violence and long continuance of the diſeaſe has weakened the inteſtines, and has corrupted the blood to ſuch a degree, that obſtructions and indurations are effected, which may preſs together and ſhut up the bilious canals.

When the natural flow of the bile is interrupted by one or ſeveral of theſe cauſes, it will be collected in too great a quantity in the bilious canals, and aſcend into the gall bladder, which is hereby diſtended. It will likewiſe diſtend the bilious canals, by which it irritates the nerves on both of theſe places, and ſometimes cauſe a fever.

As an intimate connection ſubſiſts between the nerves of the liver and thoſe of the ſtomach, this laſt mentioned *viſcus* alſo ſuffers a great deal; it aches, loſs of appetite, nauſea and a vomiting enſues, the breathing is laborious, the child has no reſt, is in pain, cries, and will not ſuck. Hence the bile is preſſed into the blood veſſels through the *vaſa lymphatica*; (ſee the mentioned diſſertation *de Ictero*, p. 31. not. 5.) conſequently being mixed with the blood, flows with it all over the body to the ſmalleſt veſſels of the ſurface.

Therefore a yellow colour is diffuſed over the whole body, this being eſpecially more conſpicuous on the temples, the white of the eyes, and the nails *; the urine turns yellow, and ſtains paper and linen dipped therein with the ſame colour; the linen of the bed gets likewiſe a yellow caſt from the ſweat; the ſpittle and the veins under the tongue appear alſo yellow, and the fat which is filtered from the blood gets the ſame colour: alſo the brain, all the *viſcera* in the cavity of the breaſt and the *abdomen*, muſcles, mem-

* As *icterici* do not look yellow by candle light, a phyſician ought to viſit ſuch patients in the day time. The hair is ſaid to grow yellow in ſome patients, as Doctor *Schenck* aſſerts in *Obſ. M. L.* III. *Obſ.* 1. *Riedlinus, M. Lin. Med. A.* 1697, *Feb.* 7. *p.* 88.

branes,

branes, cartilages, and bones; nay the blood itſelf alſo looks yellow, according to the obſervations of ſeveral authors, as well as my own, eſpecially reſpecting a noble lady, who, having the jaundice combined with a *pleuritis*, was bled a few times during the diſeaſe.

As the bile is bitter, all that the patients receive into the mouth likewiſe taſtes bitter to them; and ſeveral phyſicians have obſerved that ſome patients affirm all objects look yellow to their ſight.

The bile, being of a bitter and acrid quality, cauſes a violent itching, which, chiefly in the night-time, becomes almoſt intolerable to full-grown perſons when the diſeaſe is of a long duration. The bile is a ſubtle ſoap, and conſequently of a very diſſolvent power; therefore it comes to paſs that the blood in this diſeaſe is diſſolved to ſuch a degree that it cannot be contained within its veſſels. This is the cauſe of the dropſy and dangerous hæmorrhages, which follow after a jaundice of long ſtanding.

The great damage cauſed by the bile's returning in this manner and mixing with the blood is not the only evil which ariſes from thence; for beſides that, its neceſſary preſence and good effects in the inteſtines are alſo thereby loſt. Therefore acidity will now prevail; the patients will be affected with gripes, and the bad conſequences attending them (ſee p. 18.); the food cannot be digeſted as it ought, conſequently a bad *chylus* is prepared from it, which can only form bad blood. The body will be bound, the wind pent up, and the belly diſtended and hard; the excrements get an unnatural colour, grow white, or, in caſe the *meconium* ſtill laſts, they turn black.

After what has been obſerved there will be no difficulty in knowing this diſeaſe. It diſcovers itſelf plainly by the yellow tinge on the white of the eyes, on the temples, forehead, and the whole body; by the yellow urine which ſtains linen and paper dipped into it; beſides, this liquid generally has a thick appearance, and leaves a ſediment at the bottom of the glaſs ſomething like pounded brickſtones. The diſtemper is alſo known by white excrements, and a coſtiveneſs which commonly attends it; by diſguſt for food,

food, rumblings in the lower part of the *abdomen*, and a pain in the pit of the ſtomach, by a tenſion, preſſure, and tenderneſs near the lower ribs of the right ſide.

When the jaundice is ſevere, the ſpittle will alſo be yellow and thick; the tongue yellow; with a bitter taſte in the mouth; alſo the ſweat ſtains the linen, and even the ſilver that the patients carry about them; [ſee *Petri Borelli Hiſtor. & Obſ. Med. Phyſ. Cent.* 1. *J. Jac. Wepfer de Apoplexia*, p. 274.] the itching in the night-time is very violent and troubleſome; objects appear cloudy to the patients, and to ſome all that they ſee looks yellow. If any *micacious* or glittering appearance is ſeen in the urine, the diſeaſe will commonly be very obſtinate.

By what has been already obſerved it will be eaſy to judge which ſort of jaundice will be more or leſs difficult to cure. It is more eaſy to cure in new-born children. The recovery of older children will be more or leſs eaſy, according as the different cauſes of the diſtemper are conquered with more or leſs difficulty. Either of them being neglected in the beginning, the conſequence will be gripes, convulſions, and death. A jaundice which is attended with a fever is worſe than when the patient is free from one.

We have great reaſon to hope that the jaundice will give way ſoon, when the patient falls into a good warm ſweating over the whole body; and the urine, which before was yellow and frothy, or black and darkiſh yellow, begins to regain its natural colour; the body is unbound by nature's own efforts, and the excrements regain their yellow colour. When the itching ceaſes by means of a gentle ſweating, then alſo the yellow tincture will ſoon diſappear.

The cure muſt be regulated according to the cauſes; therefore it is eaſily performed with reſpect to new-born children, where it is only required to carry off the ſlime and viſcidity which is collected in the inteſtines during the child's exiſtence in the womb. The electuary of manna is a gentle and proper purge for the purpoſe, if it be only mixed with a few grains of good rhubarb. Of this we give a ſmall tea-ſpoonful at a time, every third or fourth hour, till by

by rumblings in the lower part of the belly we judge that ſtools will follow. The jaundice will be over as ſoon as the *meconium* and the glutinous and viſcid juices are in this manner well carried off, and the excrements have got a yellow caſt. The child will not afterwards have occaſion for any other remedy when it can get the firſt or the new milk of its own mother, for that is then of a purging quality.

But a different cure is required when the jaundice ariſes from gripes. We muſt firſt be certain if the child is really troubled with acidity; which we diſcover by the ſigns which are enumerated, p. 18, and 173. Having found it to be the cauſe of the diſtemper, we preſcribe ſome of the remedies which we have propoſed againſt acidity in the place above-mentioned; and then, after having gently purged with the electuary of manna, we regulate the diet of the mother, or nurſe, in the ſame manner as likewiſe was obſerved there.

If we know of an older child who has lived on meal-pap, meal-groats, and ſuch other glutinous food; that it has made ſtrong meals, eſpecially of hard and improper food, and that it has the bad cuſtom of not chewing its victuals well; obſerving alſo its ſtomach to be much diſtended and hard, and a jaundice to have ſucceeded; then we muſt, as much as poſſible, prevail on the child to drink copiouſly of barley-water, or whey with a little clarified honey in it. The intention of this is to dilute the crudities and looſen them, in order that they may afterwards be evacuated more eaſily by an emetic. (ſee p. 150.) This however becomes unneceſſary, when the child pukes of its own accord, which frequently happens in this caſe. As for purges, it is always neceſſary to give afterwards ſuch as are gentle. I have always choſen the *Elixir proprietatis Boerh. ſine acido* for the children of the poorer ſort, giving of it from ſix to ten drops every day in a little mint-tea ſweetened with honey. The *Vinum aloëticum alcalinum Lond.* will be of the ſame uſe, if it be given in the ſame manner from fifteen to twenty drops at a time. But I would rather have it prepared in the ſhops with water, and not with wine. The children of richer parents can afford to uſe *Tinctura rhei amara Edinb.* c. v. to one or

two

two tea-ſpoonfuls in a day, or they may take an elixir which I have called *Elixir hepaticum*, and which does not fail in this diſeaſe. The compoſition is the following:

℞ *Rad. rhei ſelectiſſ. contuſæ,* ℥viij.
Arcani tartari, - - ℥iij.
Aqua Cinamom. ſ. v. *cong.* ¾
Digere loco frigidiuſculo vaſe clauſo, per hebdomadas 4 vas ſæpius agitando; deinde adde
Flaved. cort. aurant. rec. ℥ij.
Seminum cardamom. contuſ.
——————— *Fœniculi, āā* ℥ß
Digere per octiduum vas pluries agitando
Reſiduo poſt colat. cum expreſſione affunde
Decocti depurati rad. chicorei, ℥vj.
Agita & per linteum expreſſ. adde priori colaturæ, & in mixtis diſſolve
Saccheri, - - ℥xxiv.
D. S. Elixir hepaticum. A couple of tea-ſpoonfuls to be given at a time.

When the ſtomach has hereby become ſoftened, and no more pain is felt in it, nor in the right ſide, we muſt not yet admit the patient into the open air, but ſtill confine him to a warm room, giving him tea of elder-flowers to drink a few times a day, in order to keep up an univerſal and uniform moiſture, which finally will ſoon carry off by perſpiration all that tinges the ſurface yellow.

If the jaundice ariſes from vomiting, it is eaſily cured by ſtopping this evacuation according to the advice given in the chapter treating on that ſubject. Beſides which the patient muſt drink freely of the above-mentioned tea, in order to drive off the remainder of the yellow colour by perſpiration.

But if the jaundice be the conſequence of too ſtrong a purge, we muſt immediately endeavour to make the child vomit; which may be effected by prevailing on it to drink warm water with oil, or unſalted butter melted in it, afterwards tickling it in the throat by a feather dipped in oil. For ſome part of the medicine might ſtill remain in the body, and by this means be carried off; otherwiſe we muſt weaken and take away

away the effects of the purge, by making the child drink as much as poſſible of ſome fat ſoup, or warm milk mixed with ſweet cream; alſo injecting a clyſter of milk and oil, with intention to palliate or relieve the gripes, and in order as it were to give the inteſtines a lining. When the gripes have been thus relieved, the yellow tinge will ſoon diſappear. The ſtomach having ſuffered much on the occaſion, the patient ought to continue, for ſome weeks after, to take the *Tinctura rhei amara Edinb.* to thirty, forty, or fifty drops every day.

If worms ſhould be ſuſpected as cauſing the jaundice, one muſt firſt be aſſured that the child is affected by them; and, having diſcovered that to be the caſe, by the ſigns mentioned in the chapter on worms, one may remove the cauſe by the remedies recommended there.

But in caſe the child has for a long time been afflicted with the ague, and had frequent relapſes, the ſtomach afterwards becoming hard and diſtended; then it may be depended upon that ſome obſtruction or hardneſs is in the liver, or in the adjacent parts of it, which preſſing on the often-mentioned bilious canals, conſequently cauſe a difficult and obſtinate jaundice, which will end in a dropſy, if relief be not ſoon procured. A long time is required to reſolve ſuch indurations, therefore we ought to adminiſter remedies with a conſtancy equal to the obſtinacy of the diſorder.

For children of the poorer ſort we may, 1ſt, preſcribe the following pills:

℞ *Saponis Veneti*, ℥ij.
Extracti rad. taraxaci, ℥j.
Mellis ſinceri, *q. s.*
M. f. pilul. ponderis gr. 3. *Dr. Sr.*

Diſſolving pills. To be taken from ten to fifteen and twenty each day.

2. The patient muſt drink at each time after this a half-pint or a pint of ſuch whey as is mentioned, p. 59. provided it be in the ſeaſon, that is to ſay in the ſpring. But at other times of the year one may uſe every day, inſtead of the former, a drink prepared of

of *radix graminis* with a dram of *radix taraxaci*, which being well washed and cut into small pieces, ought to be boiled up twice over the fire in half a gallon of fresh water, and then be strained and made palatable with a little honey.

3. When it is convenient and proper to give the child broths, we boil in them the leaves of *taraxacum*, (dandelion), *cherefolium* (chervil), spinage, endive, and such like greens, when they can be got.

4. The belly ought to be rubbed every morning and night with a piece of flannel for half an hour together, always fomenting it afterwards with such-like flannels, or woollen cloths, dipped in warm vinegar and oil, squeezed out, and applied. When the *herba conii* becomes more common, and can be got cheaper, we prescribe it to the fomentations after the aforesaid frictions, morning and night. Three handfuls of this herb may for that purpose be stitched betwixt linen, and dipped in a strong decoction of the above-mentioned *herba conii Linn.* or *cicuta Stork.* and having squeezed it out, we apply it warm, changing it when it grows cold.

5. We encourage the child to keep company and play with other children, especially to take exercise in the open air when the season will admit of it. When the child is so far advanced in years as to be able to ride on horseback, that exercise would be very salutary.

6. For the rest, the diet ought as much as possible to be the same with that I have advised in the chapter on rickets.

Children of richer parents are to be cured in the same manner. But instead of the pills proposed No. 1. they can afford to use the *pillul. e conio Storck*, [see p. 59.] or the following:

℞ *Sapon. alicant.* ʒx.
Rhei opt.
Extr. marub. alb.
Tartari tartarisat. āā. ℈x.
Mellis sinceri, q. s.
M. f. pilul. pond. gr. iij. fol. Lunæ obd.
Dr. Sr.

Dissolvent

Diſſolvent pills. Of which five may be taken at a time, morning and night, afterwards drinking whey in the ſpring, but at other times of the year the drink, No. 2. *

Or they may uſe *elixir hepaticum*, or the following *liquor reſolvens*, to the quantity of a tea-ſpoonful at a time, repeated ſeveral times in a day, ſo that it does not purge, but only keeps the body unbound:

℞ *Flaved. cort. aurant.* ℥ij ß
Vini Moſellan. ℥x.
Conquaſſentur uſque dum vinum ſaporem imbuerit aurantiorum. Adde
Arcani tartari, ℥ij ß
Conquaſſando ſolve & adde
Sacchari albi, ℥vj.
Conquaſſa donec & hoc ſolutum ſit: filtra.

We read inſtances of jaundice ariſing from fleſhy excreſcences near the great common bilious canal [*J. a Meckern Obſ. Chir.* 43. *Boneti Sepulchr. L. III. Sect. XIII. Obſ. XIII.*] Alſo from this canal being dried up, ſhrunk, and not hollow [*Bonet. l. c. Obſ. XVII.*] And its being grown together [*Bonet. l. c. Obſ. VIII.* § *XII.*] And oſſified [*Rhodii Obſ. Med. Cent. II. Obſ.* 96. *p.* 121. and *Cent. III. Obſ. III. p.* 128. *Bonet. L. c. Obſ. XVI.*] This canal has alſo been found to be wide at the upper end, but its orifice into the *duodenum* not larger than to admit a hair [*Bonet. l. c. Obſ. XIV.*] In ſuch circumſtances we plainly perceive that there is as great an impoſſibility to diſcover the cauſe as to obtain any cure for it †.

From

* We accuſtom children to ſwallow pills by rolling them in the *ſyrupus aurantiorum*, or the like, that taſtes agreeably. But if they be not at all able to ſwallow the pills, thoſe of Dr. *Stork* for inſtance, a drachm of *extractum conii* may be diſſolved in half a pint of elder-water, and made palatable with a little ſyrup of raſpberries, giving a tea-ſpoonful at a time, two or three times a day. The *herba conii* may alſo be uſed as a tea.

† It happens ſometimes that a jaundice ariſes from a venereal cauſe: as likewiſe may be the caſe with a tedious

diarrhœa:

From hence it likewiſe follows, that an univerſal and ſovereign remedy for the jaundice does not exiſt. The yellow membrane of the gizzard of hens is looked upon to have ſuch a virtue, alſo the white part of gooſe-dung, tender birch-leaves boiled in ale, ſaffron, *rad. gentianæ*, *hypericæ herba*, and ſeveral other things of the like kind, to which either ſuperſtition has procured credit, or which perſons eaſily perſuaded to any thing have thought themſelves cured by.

In that manner the gentleman I ſpoke of, believed himſelf cured of the jaundice by the beforementioned yellow membrane, which, together with the white part of gooſe-dung and a little ſugar, was made into powder and ſwallowed. He happened to take this remedy juſt when the bile in his liver came to maturity and diſcharged the *pus* into the gall-bladder, and from thence into the bilious canals, which, being now delivered from the preſſure which had cauſed the jaundice, gave free paſſage into the *duodenum*, both for the purulent matter and for the gall.

Alſo an elderly gentlewoman thought that ſhe knew an excellent remedy againſt the jaundice. She was troubled by that diſeaſe ſeveral times in a year, it always beginning very violently with an uneaſineſs in the ſtomach, a nauſea, anxiety, vomiting, fever, pain and tenderneſs in the right ſide. Theſe ſymptoms were followed by a jaundice, and afterwards a *diarrhœa*. When the fever was ſomething abated, ſhe drank always a little ale in which young birch-leaves had been boiled; in this circumſtance following the advice of ſome other perſon. After this the jaundice went off, but returned again in a month or two, with all the above-mentioned circumſtances. In the mean time ſhe extolled her excellent remedy, but always forgot to mention that at each time, ſhe was bled, uſing beſides emollient and lenient clyſters, fomentations of

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diarrhœa: and alſo the *fluxus hepaticus*. In ſuch circumſtances all other remedies beſides mercury will be given to no purpoſe, the diſorder yielding to that only. See the chapter on venereal diſaſes.

oil and vinegar applied to her right ſide, and that ſhe had drunk copiouſly of an oily emulſion, and that gall-ſtones were carried off by a *diarrhœa*. There is no doubt but that the evacuation of theſe ſtones was promoted by the emollient remedies, and that they before had cauſed the jaundice, by ſhutting up ſome of the bilious canals, or at leaſt the orifice itſelf which leads into the *duodenum*; and ſince they had been brought ſo far, the fever and jaundice muſt ceaſe whether ſhe had drunk ale or not: for the irritation of the gall-ſtones, and the collection of gall which had been ſhut up, but now got a free paſſage into the inteſtines, were quite ſufficient to excite the *diarrhœa* which carried off the cauſe and the diſeaſe. She had frequently had ſuch attacks afterwards, and voided ſeveral ſtones, the pains became very inconſiderable, and the jaundice of a very ſhort duration, laſting only a few days. Nevertheleſs ſhe aſcribed that alſo to her remedy of birch-leaves; though the ſame is the caſe with bilious canals as with the canals from the reins to the bladder: for the greater in number and ſize the ſtones are that have paſſed through them, the larger they will become, and admit others with greater eaſe and leſs torments from the colic of the gravel.

CHAP. XXI.

On INTERMITTENT FEVERS *or* AGUES.

WHEN children at firſt get affected with the ague, it will prove very tedious and of long duration to them, as well as to older perſons, and it will alſo turn irregular if it be not well treated. But the irregularity of the ague does not make it a different diſeaſe, though we have called it by a different name in *Sweden*. The ague is not continual, but leaves the patient free from fever on certain days or hours. Again it attacks or returns at certain hours. On theſe a perſon is ſaid to have the paroxyſm or fit of the ague. Each paroxyſm is begun with more or leſs cold, followed by heat; which are ſucceeded by

ſweats. The ſweating having ceaſed, the patient is well again for certain hours till a new paroxyſm comes on. If it returns every day, or within twenty-four hours, it is called a *quotidian* ague. If it returns every ſecond day, it is called a *tertian* ague; and it is termed a *quartan* ague, if it only comes back every third day: but in caſe the fit of the ague returns every day, ſo that, for inſtance, the paroxyſm which appears on a Monday, both in reſpect to the violence of it and the time of the day, is equal with the paroxyſm which comes on the Wedneſday next following; and the Tueſday's paroxyſm is ſimilar to that of the next Thurſday following, reſembling it alſo both in reſpect to the time and violence; then the diſeaſe is a double tertian. But if a perſon has the paroxyſm two days following, and is free the third, it will then be termed a double quartan. When thoſe who have been affected with the quartan begin to get the paroxyſm every day, it is commonly ſaid that the quartan is changed into a quotidian ague: but that, however, is not the caſe, but they have then a triple quartan: for upon a more minute inquiry we ſhall find, that, both in reſpect to time of the day and violence, the paroxyſm, which comes for inſtance on the Thurſday, agrees with that of the laſt Monday; the Friday's paroxyſm reſembles that of the Tueſday paſt, and the Saturday's paroxyſm is ſimilar to that fit the patient had on the Wedneſday of the ſame week.

Each paroxyſm ought to be ſuſtained with great patience and carefulneſs, otherwiſe the ague may eaſily turn irregular. For we experience almoſt every day, that when the ſick do not wait patiently till the ſweating is over, which follows after each hot fit, and conſequently cloſes each paroxyſm of heat and cold, but drink ſomething cold, throwing the clothes off, riſing from the bed, or changing linen, then the ſweating will ceaſe, and in its place comes a new paroxyſm, or the heat comes alone, without any antecedent cold, and will not give way unleſs by another ſweating. But if the patient likewiſe is careleſs and negligent during that time, he will immediately fall into another cold and heat, which continues alſo till the ſweating comes, and is patiently ſuſtained, as it ought, till it ceaſes of its own accord: for we ought

not to ſhift and dry ſooner than that. In this ſame manner the agues of children are ill managed, and turn irregular; for as they cannot deſcribe their uneaſineſs and the heat they feel during the ſweat otherwiſe than by ſhrieking, therefore being taken out of the cradle in order to be ſilenced, they grow cold and the ſweating ceaſes; which cauſes ſeveral paroxyſms to follow cloſe upon one another that might have been avoided by its remaining in bed till the true paroxyſm was finiſhed, together with its ſufficient ſweating.

I will omit all vain hypotheſes with reſpect to the true cauſe of intermittent fevers, as alſo all unneceſſary enumeration of the accidents which make them break out *. Let it be ſufficient to ſhew how it is to be remedied, and the importance of not leaving the cure to time and to the efforts of nature only: for though that ſhould ſucceed in other countries, yet we have found that it will hardly anſwer in *Sweden*. The change of heat and cold weakens the patient ſo much, that the ſtrength vaniſhes with a few paroxyſms, and the blood is ſo diſſolved that its thinner parts are exhauſted by ſweating, the body grows lean, the freſh hue of the face is loſt, and the whole complexion grows ſallow; till at laſt the patient gets affected with a ſwelled ſtomach, indurations in the inteſtines, and a dropſy, or ſuch other diſeaſes, which then hardly ſtand the cure. If the child be very weak, and get the ague in the autumn †; then it is of ſtill

* It is remarkable, that though the patient feels himſelf very chilly during the cold fit, nevertheleſs it is proved by the thermometer, that he is in fact as warm as in his healthy ſtate, or five or ſix degrees warmer.

† We call that an autumnal ague which takes its beginning in any of the months from *Auguſt* to *February*: the others are called vernal agues, and frequently depart of their own accord; but autumnal agues are obſtinate, and the ſooner they appear in autumn, the more people will commonly be affected by them that year. When *Nordlanders* are ſeized by the ague in ſome of the other *Swediſh* provinces to the ſouthward of them, it is uſually very obſtinate, and difficult to cure. The ſame happens to foreigners who get it in *Sweden*.

greater importance ſoon to undertake an effectual cure, as it would otherwiſe be very liable to the rickets after ſuch an ague. Full-grown perſons are ſaid ſometimes to have reaped benefit from a tedious ague. The famous mathematician *De la Hire* got rid of his *palpitatio cordis* by a quartan, and attained a great age. But perhaps it was the bark which cured both theſe diſeaſes together. Another got the better of an old difficult rheumatical pain in his right ſhoulder by means of a cold fever *. But this cannot ſtand good in reſpect to children; for the greateſt number of their diſeaſes ariſe from acidity, which rather increaſes during the intermittent fevers: the only advantage I have ſeen accruing to children from this diſeaſe is that they grow much. Profeſſor *Schulz* in *Halle* ſpeaks of a boy who was affected by a quartan for two years and a half, and grew an ell longer during that time. It is true that children ſometimes get rid of their firſt ague without taking any remedy, eſpecially if they get affected by it in the ſpring: but if it be an autumnal ague, it will hardly ceaſe within two or three months, nay ſometimes a longer time, unleſs the child gets a hard ſwelling *(placenta febrilis)* in the left ſide under the ribs, or ſome other diſeaſe which deſtroys the ague. This puts me in mind of a boy who was troubled by the irregular ague for three months together, and got rid of it by being infected with the ſmall-pox. A child who had a tertian was inoculated on the day when it was free from the fever; and the paroxyſms never returned, neither during nor after the ſmall-pox. See the Provincial Newſpaper, No. 47. year 1769.

The ague is ſometimes diſguiſed under other diſeaſes, and it is then very difficult to diſcover. I ſaw a child in *Geſle* who was affected by a violent bleeding

* A gentleman, who for ſeveral years had been affected by a rheumatical pain in his right ſhoulder, got an ague in the autumn of 1766. After a few paroxyſms the pain vaniſhed: but the ague being cured by bark and *ſal ammoniacum*, the pain ſeized its former place. This vaniſhing again, a tooth-ach tormented him, but that yielded to a large bliſter of *cantharides* applied on the left ſhoulder; ſince which time he has felt pains no where.

at the noſe every ſecond day. It had already loſt ſo much blood as would have endangered its life, had I not immediately given it the bark. A gentlewoman was tormented, every ſecond day, by a very violent pain and inflammation in the eyes, which kept a regular courſe, and would yield to nothing but the bark. I cured a gentleman with the ſame medicine. He was affected every ſecond day with pains in the right ſide, otherwiſe quite ſimilar to thoſe which commonly attend the gravel. Another had a violent dry cough, which came on every ſecond day, the paroxyſm of it always being finiſhed by a profound ſleep and ſweating. He was alſo relieved by the bark. We may diſcover ſuch a diſguiſed ague by its being intermittent, and the paroxyſms keeping their time regularly, beginning with yawnings and ending with ſweat of a ſour ſmell; (ſee *Halleri Elem. Phyſiol. VII. p.* 54.) and the urine, during the interims of the fits, depoſits a ſediment at the bottom of the glaſs, reſembling brick-duſt. Such agues will not bear any dallying with, but require a ſpeedy relief. But thoſe are moſt dangerous which during the fits are attended with a violent vomiting alone, or together with a *diarrhœa*, or bloody ſtools, or pains at the left orifice of the ſtomach, or violent ſweating which does not relieve the heat, or with cold ſweat; or ſuch as come on without manifeſt cauſe, with fainting and oppreſſions; or when the cold fit does not terminate in heat and ſweat; or ſuch as are attended with a profound ſleep, as if the patient was touched with an apoplexy; or ſuch as are changed into a bad continual fever. Such agues are mortal, and kill the patient within the third, fourth, or fifth paroxyſm, if they be not immediately ſtopped by ſufficient doſes of the bark. Of that kind are alſo the agues in *Sweden* ſometimes, but more eſpecially in *Italy*, *Minorca*, *England*, and *Hanover*. We have commonly been of opinion, that thoſe who die in the ague always go off in the cold fit; but it was found in *Minorca* that the greater number died during the heat. A ſimilar obſervation is made by Dr. *F. Lind*, in his Eſſay on the Diſeaſes incident to *Europeans* in hot Climates. I only mention this in order to ſhew that the ague is a diſ-

eaſe not to be trifled with; but that it requires good nurſing, and, in caſe malignant ſymptoms appear, a ſpeedy relief. I ſhall therefore haſten to mention the remedies ſuitable to children.

A child affected by the ague ought to be put into a warm bed, which ſhould be kept in a large apartment if poſſible, free from the draught of air; for, as we always perceive a ſour ſmell to ariſe from a patient lying in the ague, it is plain, that this, being confined together with the patient in a ſmall room, would be abſorbed, and conſequently protract the fever: therefore the room ought to be kept neat, and the floor beſtrewed with freſh branches of ſpruce chopped. Alſo, when circumſtances and the ſeaſon permit, the door or a window may ſometimes be kept open during the hours in which the patient is free from the fever; taking care, however, to do this prudently, that he be not expoſed to a ſudden guſt of air. Indeed it would be better for the patients to live in the uppermoſt ſtories. But, if there be no opportunity for this, ſome ſticks ſhould be kept burning conſtantly in the ſtove, in order to clear the air of the room.

The ſick ought not to drink any thing during the cold fit, for that will cauſe oppreſſions of the ſtomach, and increaſe the uneaſineſs. It will be more proper for him to drink freely during the intervals of the paroxyſms, for inſtance ſome palatable ptiſan of *radix graminis*, *taraxaci*, *&c.* and, according to the advice of Mr. *Tiſſot*, a little tea of elder-flowers with honey, a little before the paroxyſm is expected. Irritations, or diſpoſitions to vomit, are to be promoted by tepid water, which for that purpoſe ſhould always be at hand. Any one of the following will ſerve as a proper drink during the hot fit, for inſtance, a little warm tea, with a few drops of Rheniſh wine in it: whey, but diluted with water, for that makes it more refreſhing, or quenching to the thirſt: panada, made palatable by a little lemon-juice, ſugar, and a very ſmall portion of Rheniſh wine: tea, with lemon marmalade: or equal portions of ſmall-beer and water mixed with a little lemon-juice and ſugar: barley-water, in which a little *gelatina cornu cervi* (hartſhorn jelly) is diſſolved: or one may take preſerved red currants, Norlandic berries,

berries, ſtrawberries, raſpberries, cherries, or cranberries, pouring boiling water on them; and, when this begins to cool, we add a little Rheniſh wine to the decantation of it; or we may diſſolve jellies of them in water. Sick perſons ſoon grow tired of one ſort of drink, therefore it is neceſſary to have a variety for change. It is a diſadvantage, in the cure of this diſeaſe, that we are obliged to order ſuch four things, as nothing elſe would quench the thirſt ſo well; for the agues, eſpecially thoſe of children, are attended with much acidity, and therefore plain water, or very weak chicken broth, would be better.

It is more proper not to drink any thing till the heat is arrived at its height. The head-ach, which at this time uſually troubles the patient, will eaſily go off, if he can bear a thin cloth over his face; for the perſpiration, being confined under that covering, ſerves to ſoften the pores of that part, and ſoon brings it into a ſweat. Cold applications are dangerous on theſe occaſions: the ſweating muſt be ſuſtained with patience: but the patient may drink as often as he pleaſes during that period, only a little at a time, and ſuch as is not cold. There is no neceſſity for keeping the hands under cover: it is ſufficient to lay a handkerchief over them: but if they were quite bare the ſweating would go off too ſoon. The ſweating having ceaſed of its own accord, clean linen ought to be put on, taking care that it be thoroughly dry, and warm, in order that it may attract the unclean moiſture which ſtill lodges in the pores. It is alſo neceſſary to ſmoke it with maſtick, as a means to prevent too great a relaxation of the pores. We may take the child out of bed when the paroxyſm is over, and carry it before a blazing fire, that the exhalations which ſtill continue may be the better diſſipated, and neither ſtop in the pores nor at the ſurface. The ſheets ought likewiſe to be ſhifted, or at leaſt dried by a flat iron, before the child is put to bed again.

The diet ought to be regulated in the following manner: No nouriſhment is to be taken during the paroxyſm, nor ſoon after it; but it ſhould be done about four or five hours antecedent to it, in order that the concoction may be over before the next paroxyſm

comes on. In general the patient muſt avoid milk, fiſh, ſalt and ſmoked beef, raw greens, eggs which are boiled to hardneſs, and every thing that is fat. It were better if the ſick would be contented with a little roaſt mutton or veal, broths, barley-gruels, mulled ale with eggs in it, and ſoups of beer and bread: for the ſtomach muſt not be overloaded, but only ſo much food taken as is required to keep up the ſtrength. It will ſeldom ſucceed, to cure the ague by hunger. *Tulpius* gives inſtances of its being attended with bad effects.

The firſt paroxyſm being over, we muſt reſolve on what remedies the patient is to take during the free hours; as either a purge or an emetic will be required, both of which being weakening, we muſt give the proper remedy immediately, before the ſtrength be exhauſted by the fever. The emetic becomes neceſſary if the child has made hearty meals, eſpecially of ſolid and hard food, and its tongue and *fauces* are ſordid; if it complains of a bad taſte and difficult breathing, it having been vertiginous during the paroxyſm, and the under lip trembling; or if *nauſea* or real reachings make their appearance. Therefore we excite a vomiting by *cort. r. ipecacuanhæ*, which is to be mixed and adminiſtered according to the preſcriptions given, p. 197. in the chapter on the hooping-cough. But as for the time of adminiſtering this remedy, it is commonly given three hours before the paroxyſm, ſo that it may take effect before the cold fit comes on. Nevertheleſs I am thoroughly convinced that it is of greater ſervice to give it immediately after the paroxyſm, eſpecially the firſt or ſecond; for, after ſeveral returns of them, the child will be weakened, and require more time to recover after each. The reaſon of the vomiting being more ſerviceable at that time is the following: In the ſame manner as we find the paroxyſm cloſed by an external ſweating, which carries off a part of the febrile matter; ſo likewiſe ſweat, together with ſome febrile matter, comes from the internal parts, and is retained within the body, in the ſtomach, inteſtines, and liver; from which laſt place it is carried with the gall down into the bowels. Therefore watching the opportunity to expel it out

of

of the body before it has time to enter the lacteal veſſels and mix with the blood again, a great deal is thereby gained. For this reaſon we find that many get rid of the ague by a ſingle emetic. The remedy may be repeated after the next paroxyſm, in caſe it be judged neceſſary. If the ſtomach is diſtended, rumblings of wind and the pain of the back are troubleſome, then a purge or two will do ſervice. I commonly make uſe of the following powder:

℞ *Rad. jalapii* *gr.* x.
. . . . *Ari præparati* . . . .
Salis abſinthii . . *āā* *gr.* iv.
Tartari vitriolati *gr.* ij.
M. f. pulvis D. S. A gentle purge for the ague.

To be taken on the fever-free day in weak chicken broth, ſo that it takes effect two hours before the next fit is expected.

We may repeat this medicine on the day free from the fever, in caſe the ſame ſigns ſhould ſtill continue. And I know many who, by this method only, have got rid of their ague.

Every ſecond paroxyſm is more ſevere in a double tertian ague, and, as the patient always finds himſelf moſt eaſy on the next forenoon after the ſeverer paroxyſm, therefore it is moſt proper to chuſe that time for giving the purge.

When three paroxyſms are already paſt, we ought to give of the following fever-draught to the child, to be taken a ſpoonful at a time every ſecond or third hour on the intervals of the paroxyſms: one drachm of ſalt of wormwood is to be diſſolved in half a pint of water, adding to it gradually upwards of two ounces of lemon-juice, till no more fermentation enſues; then make it palatable with as much ſyrup of oranges as is required. For want of lemon-juice we may take good vinegar. The doſe which is taken of this draught next before the paroxyſm ought to be a little warmed. If this does not prevent the paroxyſm from returning, we muſt examine, by the ſigns above-mentioned, whether there be ſtill required an emetic or purge; in which caſe they are to be repeated, and after that the fever-drink is to be continued again till the ague be quite cured.

cured. We have reaſon to hope for good ſucceſs in this: 1. If that paroxyſm which falls on the fifth day be neither longer nor more difficult. 2. If the urine grows turbulent after the paroxyſm, and precipitates a pale ſandy ſediment. And, 3. If each paroxyſm after that is more gentle. 4. If the ſtrength does not give way too much. 5. If the patient now gets ſome eruptions on the noſe or the lips; for I have frequently obſerved, that, if this eruption comes earlier, the ague will prove obſtinate, eſpecially if the patient has it for the firſt time. In caſe theſe ſigns ſhould not appear, but the ague continues, we ought likewiſe to continue with the fever-drink, and to effect that the child gets a heat and ſweat by the time the cold fit and chillineſs ſhould come on. And ſo far it is neceſſary to take notice how many hours the paroxyſm changes in coming ſooner or later, or if it always returns exactly on a fixed hour of the day (which laſt ſignifies an obſtinate ague). Otherwiſe we do not know on what hour the patient is to be brought into a ſweat.

I have attained this point by ſeveral things. 1. By the patient's going into a warm bed an hour, or half an hour, before the paroxyſm has been expected, and drinking warm tea, or warm ale, with bread and cummin ſeed in it; and at the ſame time a thick piece of woollen cloth or flannel has been dipped in a mixture of freſh butter and vinegar melted over the fire, then ſqueezed out, wrapped up in linen, and applied to the ſtomach as warm as the child could bear it.

2. For others I have ordered this piece of cloth to be ſprinkled beſides with a little *aqua reg. Hung.* or Hungary water, or inſtead of that with a little brandy.

3. Sometimes I take the half of a hot loaf of ſour bread, wrap it in a piece of thin linen, ſprinkling it with Hungary water, or inſtead of that with ſpirit of camphire, and then apply it to the ſtomach as warm as the child could bear it.

The ſweating which followed I always ſupported, during the paroxyſm, with warm tea, whey, or whatever drink the child reliſhed moſt. When the next paroxyſm was expected, I proceeded in the ſame manner, by which the ague generally gave way, if it was not of a bad kind.

Almoſt

Almoſt all the remedies which are employed by old women and quacks againſt the ague act according to this principle. It is very well known that the ancients applied a veſicatory to the neck, or on the inſide of either of the hands, ſo that it ſhould begin to raiſe a bliſter at the time the fit of the ague was expected. By this means ſweating and heat enſued inſtead of the ſhivering. Now in the ſame manner old women apply the plant *ranunculus ficaria (Linnei)* on the wriſt, which often cures the ague by effecting heat, inſtead of the cold fit, if it happens to raiſe the bliſter juſt at that time. Others ſpread an unguent of tar and garlick on the ſtomach, chiefly in the form of a horſe-ſhoe, thereby raiſing pimples or bliſters. Some perſons take equal portions of ſoot, ginger, and ſalt, making it into a plaſter with the yolk of an egg, and then apply it to the wriſts; and renew the remedy every twelve hours, till the cure is performed. Others again make ſimilar plaſters, or applications of ſoot, *ſal ammoniac*, cobwebs, pepper, *theriaca*, or turpentine oil. It is indifferent what materials we make it up of, provided there be ſomething acrid in it which is capable of cauſing bliſters, heat, and irritation, at the time the patient otherwiſe would get his cold fit. The following remedy was communicated to me by a friend, who aſſerted that it had cured old and young perſons both of the quotidian and quartan agues in the ſpace of twenty-four hours. Take as much tobacco as commonly is required for ſtopping a tobacco-pipe, mix with it nearly double the quantity of ſour bread, making it into a coherent paſte with ſome vinegar, a little before the ague-fit, and, when that comes on, tie a part of it over the pulſe of the wriſts. An itching and pain will hereby be cauſed, but the paſte is not to be taken off or moved in the leaſt within the firſt twenty-four hours, nor are the puſtules to be opened which then appear. I tried this remedy on ſeveral patients during the ſummer in the year 1753: ſome were hereby cured, on others again it did not produce the leaſt alteration. A man of veracity told me that the following plaſter had cured the ague: Take two drachms of *theriaca*, one drachm

of

of turpentine; *flores ſulphuris*, allum, and pepper, of each twenty grains, *oleum diſtill. rutæ* ten drops, and camphire ten grains; make it into a plaſter, and apply it on the inſide of the wriſts. I have heard others give great encomiums to the milk of a larger quadruped immediately taken out of the animal, and applied on the ſtomach of the child as warm as it is. I have not tried this, but nevertheleſs I firmly believe the above-mentioned piece of flannel to be both more commodious and more uſeful. Others again make a little bag, in which they put a little *aſſa fœtida* and camphire, and ſuſpend it on their neck. I never found this to ſucceed, though I know a great many who tried it. Camphire externally applied cauſes a ſweating in many ſubjects: conſequently the foundation is the ſame. Old perſons are frequently cured of the ague by taking garlick internally, according to the ſame principle.

Proſper Alpinus mentions that he has cured himſelf and ſeveral others by clyſters made with a pint of *decoctum majoranæ* and three ounces of *oleum lauri*. Others have been uſed to anoint the *ſpina dorſi* with calefacient oils. *Forreſtus*, for inſtance, mentions himſelf to have cured a relapſe of the quartan ague with a mixture of *oleum anethi* and *chamomillæ* applied in this manner. *Pr. Alpinus* alſo made a plaſter of equal portions of wheat-flour and *thus maſcul.* mixed with the juice of mint and ſpread on linen, and applied it warm on the *ſpina dorſi*. Mr. *De Haen* (in his *R. Med.* XII. p. 262.) relates that a woman, who had been troubled with a quartan ague for five weeks, got rid of it by taking ſulphur juſt when the paroxyſm came, which threw her into a profuſe ſweat. The paroxyſm did not return again, notwithſtanding a purge was taken ſoon after. The ſame remedy has been for a long time cuſtomary among the poorer people in *Sweden*.

But we dare not rely on ſuch remedies when the ague is of a bad kind. Double tertians, in which the ſeverer paroxyſms happen at certain fixed times, are generally of a bad kind. The third paroxyſm of it will commonly ſhew if it will turn out ſevere; for if any of the above-mentioned bad ſymptoms then appear,

appear; they will return ſtill more violently the next paroxyſm. When matters ſtand thus, we muſt immediately have recourſe to the bark: therefore I always give this bleſſed remedy when the paroxyſm, which falls in on the fifth day, is longer and ſeverer than any one of the former. Alſo if the child be weak, and falls into a profuſe ſweating as ſoon as it is aſleep. The innocence of this remedy would plainly appear from the numerous ſalutary effects it has produced, and which I and my brethren the phyſicians could prove by many caſes, if it were required. Only we ought to take care that the bark be not adulterated, and that we uſe a ſufficient quantity of it, continuing till the febrile matter be quite eradicated; otherwiſe, any thing of that remaining in the body would bring on the ague again, in the ſame manner as the ſcab will return if the contagion has not been quite deſtroyed by a ſufficient quantity of ſulphur. Therefore we muſt not alledge the returning of the ague as the fault of the bark, but to the patient's not having taken a ſufficient quantity of it. All the diſtempers which ſome people unjuſtly blame the bark for, were formerly more frequently ſubſequent upon an ague than at preſent, notwithſtanding that the bark was unknown in thoſe days. It was firſt introduced into *Europe* about the year 1649, but very ſparingly given till 1679. It was firſt known in *Sweden* in 1690. The greateſt difficulty is to make children take it. I have commonly uſed the following method *:

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* Mr. *de Haen*, 1. c. p. 261. mentions that a noble lady made the bark palatable for her child by boiling three ounces of it with two pints of water for an hour and a half: it being cool, ſhe ſtrained it ſeveral times through blotting-paper laid double. The coarſer powder then partly fell to the bottom, and partly remained in the ſtrainer. The decoction was thereby made weaker, but the taſte of it a great deal milder. It is indiſputable that the bark in powder is more efficacious; but the decoction agrees better with thoſe who have a ſenſible ſtomach. In p. 190. of this work is mentioned how one may induce children to take bark in wafers.

Boil

Boil three drachms of fine pounded bark in a pint and a half of good water till three ounces of water only remain. This is to be preſſed through a ſtrainer; then pour two ounces of *aqua aurantiorum* on the remainder of the bark, and let it likewiſe be ſqueezed through the ſtrainer, and be mixed with the former; adding alſo a half or a whole ounce of *ſyrupus hordeatus Pariſ.* according as the child loves it more or leſs ſweet. Of this we give the child a tea-cupful at a time ſo often, that two ſuch whole doſes preſcribed in the recipe may be conſumed during the hours the fever intermits. Though no other paroxyſm comes on, the child muſt nevertheleſs drink ſuch a doſe every day, a tea-cup at a time, till it has quite recovered its former health and freſh hue again. Then we leave off giving the remedy for ſeven days after the *tertian*, and thirteen days after the *quotidian* and *quartan* agues. Theſe days being paſt, we give the child a doſe again each day for ſeven days. This is called the firſt repetition. Then having made another interval as long as before mentioned, we make another repetition for ſeven days; continuing in the ſame manner till three or four intervals and repetitions are paſt; and in caſe the child has been afflicted with a quartan ague, then I always uſe the fifth repetition for greater ſecurity ſake. If the child grows tired of this potion, we may give it the bark in the following manner:

Take of preſerved orange and lemon peel one ounce and a half of each ſort, pound them in a marble mortar, adding to it during the time, gradually, ſix ounces of cherry water and three ounces of orange water; preſs it all through a ſtrainer, and adding to it three drachms of bark, two drachms of weak cinnamon water, and an ounce and a half of ſyrup of oranges; keep it in a phial, and give of it a ſpoonful at a time ſo often that all be taken before the next fit is over. We may alſo give the powder of bark in an emulſion of almonds, or in weak chocolate. A young nobleman who was accuſtomed to drink wine, was cured by the following, as he could not take the bark in any of the other forms.

℞ *Pulv. Chinchinæ*, ℥vj.
coqu. c. aquæ Fontanæ, ℔vj.

ad

ad remanent. ℔ ij. *reſiduo affunde,*
Vini Albi Gall opt. ℔ ij ß.
Diger. p. horam, exprime et affunde de novo
Vini optimi, ℔ j ß.
Digere p. horam, cola et exprime,
In colaturis mixtis ſolve ſuper ignem,
Sacchari albi, ℥ xv. *et adde*
Flaved cort. aurant. rec. e malis duobus
Ebulliant ſemel addendo,
Pulv. cochinilæ, ʒ j ß.

D. S. Bark wine, to be taken two ſpoonfuls at a time every hour or every two hours during the intermiſſion.

The child will not be injured in the leaſt by taking more bark than what is requiſite for the cure, but it will ſuffer by taking too little. If the child cannot at all ſwallow any preparation of bark, it may be cured by clyſters of that remedy. The body muſt firſt be unbound by an uſual clyſter, then we may inject a few ounces at a time of the decoction, ſo that it may be retained, and enter into the blood by the abſorbent and lacteal veſſels. See *V. Haller*'s *Elem. Phyſ.* vii. p. 178. As ſoon as one is carried off, another muſt be injected again.

A purge will ſeldom be wanted after the cure is performed, for a good bark alone keeps the body open; nevertheleſs parents will commonly require it for their child; and in caſe its body be bound, we give it a little rhubarb with the bark.

If the child is affected with the ague before it is weaned, we cure it, 1ſt, by cleanſing its ſtomach and bowels well by the elixir of rhubarb; 2d, by letting the nurſe take the bark in the ſame manner as if ſhe herſelf had the ague. She may take it in powder, rather wrapping it up in wafers, in order that ſhe may not grow tired of it.

In the year 1750, I was affected with a kind of ague which phyſicians call the *Semitertian.* It was attended with one paroxyſm the one day, and two the other. As I had a little before that been troubled with a difficult *meſenteric* fever, I had grown tired of taking the bark, and was beſides ſo weak and enervated, that I could

could not take any medicine at all. Therefore I ordered ſix ounces of bark to be boiled with water into a poultice. This was put between thin linen, and applied of a moderate heat to my ſtomach in the morning on the third day, warming it as often as it grew cold. The paroxyſm did not return any more. I continued the uſe of this fomentation for ſeven days, and my former ſtrength and health recovered tolerably faſt. In the Medical Obſervations and Inquiries, Vol. ii. p. 255. publiſhed in *London*, 1763, I find that Doctor *Sam. Pye* has fallen on the ſame thoughts. He relates ſeveral caſes of children having been happily cured by external applications of the powder of bark, both from agues and intermittent fevers. Doctor *Alexander* has likewiſe cured himſelf of the ague, by bathing in a decoction of bark. See his experimental eſſays. The great difficulty we have in prevailing on children to take the bark internally, ſhews that ſuch inventions are of importance *.

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* As for the *Oleum animale Dippeli*, I never tried it for children, but I have preſcribed it frequently for full grown perſons, likewiſe in the quartan ague. The body being prepared. the patient took thirty drops of it in a little warm ale and bread, half an hour before the paroxyſm was expected; ſilence being kept about him, he fell aſleep and into a profuſe ſweat, and thereby the cure was attained. But if during that time he was awaked by one means or other, the remedy would not ſucceed for that time, but better precautions muſt be taken at the next paroxyſm. *Sal amoniac* has for a long time been recommended againſt agues, but it is not poſſible to make children take it on account of its taſte. I have ſeldom been able to prevail on older perſons to take it in a ſufficient doſe. A gentleman did however ſwallow two drachms in a day of it in warm barley-gruel, and was thereby cured of the quartan, but getting a relapſe after a few weeks, he then choſe rather to take the bark. The common people who do not mind the taſte ſo much, will reap more advantage from this *ſal amoniac*; but I fancy it muſt be repeated in the ſame manner as the bark, as I have found relapſes otherwiſe to follow when it was uſed without repetition.

CHAP.

CHAP. XXII.

On WORMS.

WHOSOEVER is affected by worms, ought to endeavour to get rid of them, the ſooner the better, for they cauſe a great many diſorders in the human frame, and keep increaſing both in bulk and number, as long as they remain undiſturbed; one is not ſecure a moment from being attacked by them; for every thing that may happen to cauſe them to move, creep, ſuck, or to bore as it were in the inteſtines, will immediately bring on ſickneſs; for inſtance, eating ſomething one is not accuſtomed to at home, or any thing ſweet, &c. Children and young perſons will be immediately affected in ſuch caſes; but old people, whoſe inteſtines are leſs ſenſible and irritable, as alſo robuſt perſons, whoſe bowels are lined with a firm *mucus* in the inſide, do not ſo eaſily feel the diſturbance. Nevertheleſs worms are ſo far equally hurtful to all, that they always partake and conſume a great deal of the food one has taken, and that their excrements and the exhalations of them mix with the food, whereby the nouriſhment of the body grows too ſcant or too bad, or produces continual hunger *. Therefore the more in number and larger the worms are, the more one will ſuffer in this reſpect. Beſides, it is to be obſerved, that thoſe who are afflicted with worms, will always be more endangered than others by inflammatory fevers, eſpecially by the ſmall-pox. For this reaſon we do not venture to inoculate a child that is known to be troubled by the worms.

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* Doctor *Nitret* in his letter to Doctor *De Haen*, *Act. Med.* xii. 219. mentions a woman who was ſo hungry, that ſhe was obliged to eat day and night. The reaſon was, that ſhe had eighteen tape worms *(tæniæ)* which were afterwards expelled.

Worms are bred of their own particular ſeed or egg, as all other living animals; a fly is bred of a fly's egg, the egg of a hen produces a chicken and not a ſnake; of a gooſe's egg is bred an animal of the ſame ſpecies; worms alſo are propagated by worms and nothing elſe. Their eggs are conveyed into the human body by food and drink, eſpecially by the water one drinks, and by which the veſſels in the kitchen are waſhed. The common people in *Sweden* drink much water, ſometimes not very clean, eſpecially during the ſummer; they then likewiſe eat much raw ham. In all theſe the worms might have laid their eggs by thouſands, which are ſwallowed and bred in the ſtomach and inteſtines. Nay, perhaps, ſmall worms are ſometimes ſwallowed with impure water, therefore the vulgar are ſo much troubled by them; ſo that among the ſick people who are to be cured at the mineral water at *Satra*, by the charitable foundation of Biſhop *Kalſenius*, three fourths are affected with diſeaſes which ariſe from worms. Some fiſh, for inſtance, the bream, the eel, the rud (*cyprinus rutilus*) * are frequently infeſted with worms, eſpecially the *tænia*, which probably is more commonly conveyed to people by eating thoſe fiſhes; for it is more common in places where plenty of fiſh is to be gotten than elſewhere, ſo that more people are affected by the *tænia* at *Stockholm* than at *Upſal*, and ſtill more in *Finland* and in *Ruſſia*. Every other perſon in *Holland* is plagued by this worm, and every tenth perſon in *Switzerland*. It is true that the *tænia*, which lodges for inſtance in the bream, is flat and white, but perhaps moſtly without articulation. Nevertheleſs it is found ſometimes articulated, which may be ſeen in a *tænia* taken out of a bream from the lake of *Malaren*, and which animal I ſtill preſerve in ſpirits. But as the ſame ſpecies of *tænia* which lodges in man is likewiſe found in water, according to the aſſertion of *Archiater V. Linné*, Biſhop *Menander*, and Doctor *Unzer*, there is no doubt but that it may alſo live in fiſh. That in fact it is found

* See more of this in the narrative of Doctor *Faxe* to *Celleg. Med.* 1765. p. 281, and the following.

in

in fiſh, does likewiſe appear from *Obſerv. Anat.* p. 84. One would think that the worms and their eggs would be deſtroyed, as the fiſh is always boiled before its being eaten; but ſeven perſons beſides myſelf once found the contrary; a diſh of *bream* was brought on the table, and in one of theſe was a *tænia*, which was ſtill alive and plainly moved about. The fault is probably, that the fiſh ſeldom are well boiled in this country, but eaten frequently half boiled. The ingenious Dr. *Montin* has communicated to the Royal Academy of Sciences, year 1763, p. 113. his experiment of the great heat the worms can bear before they die.

Few people would be able to avoid the eggs of worms, as ſometimes one thouſand of them are ſwallowed with a glaſs of water. Hence the queſtion ariſes why every individual is not troubled by theſe animals? Becauſe eggs of worms are bred in the ſtomach and inteſtines, 1ſt, If there be a moderate warmth; 2d, If they get a reſting place, for inſtance, being faſtened in the *mucus*, which makes a coating in the inſide of the inteſtines and bowels, or in the folds of the bowels, or in a place where they are not diſturbed by the continual pulſation of adjacent blood veſſels; 3d, If on account of a weaker *motus periſtalticus*, they are not immediately expelled; 4th, If they do not happen to be diſſolved, or their vegetative power deſtroyed by the ſteams which are perſpired in the ſtomach and bowels, in the ſame manner as corn is enervated and cannot grow when it has been expoſed to frequent rain. Such is generally the caſe with a weak perſon. But on the contrary, the *motus periſtalticus* is greater in robuſt people, the arteries pulſate with a greater force, the perſpiration is briſker and the heat greater, ſo that it is often equal with the 94th degree of the thermometer of *Farenheit*, in ſtrong perſons, but not ſo in weak; conſequently ſuppoſing a weak and ſtrong perſon to live on the ſame kind of food and drink, and therefore to ſwallow an equal quantity of worms eggs, it follows that theſe would eaſily be bred in the former, but muſt periſh in the latter, unleſs by frequent drinking of unclean water, ſome eggs of the immenſe number ſwallowed, ſhould at laſt faſten to the *mucus* coating of the inteſtines, or in their folds, which perhaps is the caſe

with the vulgar. For otherwiſe it is plain by what I above obſerved, that children are more commonly infeſted by worms than old perſons, women more frequently than men, and perſons of a ſedentary life more ſo than thoſe who have continual exerciſe; which is confirmed by experience.

Although there is no part in the human frame where inſects or worms of ſome kind or other have not been found *, nevertheleſs the ſtomach and bowels are the places where worms principally take their abode.

There are chiefly five kinds of worms which infeſt mankind. The firſt ſort reſembles the cheeſeworm, and is called *Aſcaris (Linn. Syſt. Nat.* Edit. xii. T. i. p. 1076); it is generally white, pointed at both ends, however ſomething more blunt at one end, according to the remarks of Mr. *Phelſum*. Theſe worms dwell in the *inteſtinum rectum*, likewiſe ſometimes in the colon, are of an incredible ſwiftneſs in their motions, creeping frequently out and in again, whereby ſometimes they cauſe an immenſe pain about the *meatus urinarius*, nay even the *fluor albus* in young girls; they are never found but in great numbers.

The ſecond ſort is called *Lumbricus inteſtinalis teres*, (*ibidem*, p. 1076.) Theſe reſemble the common red ground worms or rain worms intirely, except in the internal conformation, and that they are more white, and that they have not ſo plain a ring or *cingulum*, as the earth worm. Nevertheleſs that has alſo been obſerved by Mr. *Phelſum* (Eſſay on Worms, *Tab.* v.) and likewiſe Mr. *Van Den Boſch* (*Hiſtoria conſtit. Epid. verminoſæ*) which I find quoted in the Literary Gazette of *Gottingen*. They are marked with about one hundred inciſions. Baron *Munchauſen* has counted about one hundred and forty ſuch inciſions on a common red earth-worm (*Lumbricus terreſtris Linn.*) At each ring, the great one excepted, are four rows of double ſetiform productions (*ſetæ*), and conſequently eight hundred ſuch hairs or *ſetæ*, when the worm is marked with one hundred rings; theſe he can alſo move out-

* A great collection of theſe are enumerated by Mr. *Pallas* in his Diſſertation *De Infeſtis viventibus intra viventia*.

wards,

wards, and contract at pleaſure; their direction is from both ends towards the middle of the worm, but there they ſtand ſtrait erected *; *Archiater V. Linne* has obſerved them on the inteſtinal round worm, (*lumbricus teres.*) Theſe are the inſtruments for the worm to move about with, to keep himſelf faſt, to prickle, gnaw and to wound the inteſtines, which may cauſe innumerable plagues. Great pain may likewiſe be effected by its mouth, which is found at that end where three ſmall elevations are to be ſeen. The *lumbricus terreſtris* contracts, or makes itſelf thick and ſhort. The *lumbricus teres* or inteſtinal worm is deſtitute of that power. The former is ſoft whether it be dead or alive, the latter is hard and diſtended; its rings are however to be ſeen, although they are drawn out as it were. Such a worm is ſeldom to be met with alone or ſingle in the human inteſtines, but commonly with ſeveral more; they are then generally ſmall. If a ſingle large worm is expelled, then we hope that there are very few or none of them left behind: a poor little girl, eight years of age, was affected by worms ſo hard, that ſhe ſometimes, after her convulſions, lay inſenſible for a quarter of an hour, nay half an hour together; within nine days I expelled ſomething more than ninety *lumbrici* by the pills which afterwards are to be deſcribed.

The round worms which infeſt the human ſpecies, are either males or females, but earth worms (*lumbr. tereſtr.*) are hermaphrodites. Notwithſtanding the great external ſimilarity between theſe two ſorts, nevertheleſs the internal ſhape is very different, which one will find on comparing *Wiliſii* Anatomy of *lumbricus tereſtris* (ſee his book *De Anima Brutorum*, Chap. iii.) with that of the *lumbricus teres inteſtinorum* made by *Redi*, *Valiſnerus*, *Tyſon* and *Klein*. Several have obſerved that theſe worms ſometimes pierce the inner coatings of the inteſtines, and take their abode between them. Such an inſtance may eſpecially be read in *Storck*, *Ann. Med.* ii. p. 228. This ſpecies of worms not only lodges in the ſtomach and inteſtines, but is likewiſe

* For all theſe obſervations we are indebted to Profeſſor *J. A. Murray*.

ſometimes to be met with in the reins. See *Ruyſch. Obſ. Anat. Chirurg.* No. 64, and *Pallas* l. c. p. 18, 19. Nay Mr. *Du Verny* found one in the head in the *ſinus longitudinalis*, on a child five years of age, which, during its life time, complained of a ſevere pain at the root of the noſe. See *Hiſt. de L'Acad. R.* year 1700. They are alſo to be met with in calves, fiſh, hogs, and ſeveral other animals. See *Pallas*, c. i. They likewiſe frequently lodge in the reins of dogs, and cauſe them great pains. *Pallas*, c. i. p. 19. *Redi*, *Bagliv.* *Andry*, *Le Clerc.*, *Lawzoni*, *Torti*, and ſeveral other laudable men, have tried to find out what beſt would kill them, by pouring on them ſeveral things when they were expelled; but the experiments giving ſo different reſults, one can reap very little benefit from it. In cold water they die immediately, which I likewiſe find Mr. *Van Den Boſch* to have obſerved. They alſo avoid quickſilver; they are ſuppoſed not to be able to bear wine and brandy, but I ſaw a worm, which in the morning being expelled from a child, was ſtill alive in the evening, notwithſtanding it had been preſerved all that time in a phial of *ſpiritus vini*. Mr. *Pallas* killed a dog with the poiſonous *ſemina ſtaphiſagriæ*, and after being opened, the ſeeds were found together with ſeveral living *lumbrici* and ſmall tape worms; ſee c. i. p. 48. The third ſort of worms is called *Tænia* (*Linnei Syſt. Nat.* Edit. xii. T. i. p. 1323) or tape worm, on account of its reſemblance to a binding. It is flat, long, articulated, and commonly white. It is likewiſe ſuppoſed to increaſe with new joints or articulations as a *ſertularia*. Of this ſort there is ſometimes one ſingle, ſometimes more in one and the ſame perſon. The one end of it is broad, with long articulations; its other end is gradually tapered, with ſhorter and ſhorter articulations, ſo that at laſt they are ſcarce to be diſtinguiſhed by the magnifying glaſs, which part perhaps is the neck, and at laſt is terminated with a narrow point, which by the greateſt number of phyſicians is called the head of the worm. This ſmaller end it can lengthen or ſhorten; (ſee *Nitret* in *De Haen*, l. c.): the joints at the broader end are eaſily ſeparated one from the other, and theſe pieces are termed *vermes cucurbitini*, or cucumber worms, which

which as each of them can live ſeparately, have unjuſtly been looked on as a different ſort of worms. When only a few yards of a tape worm are expelled, all the articulations ſeem to be of an equal length and breadth. But when ſixteen or twenty yards appear at once, one can eaſily perceive that the middle is broader though the articulations there are ſhorter than that part which is called the broad end of the worm. Each articulation is provided with a kind of nipple or round ſucking veſſel (*oſculum*): the firſt ſpecies of *tænia* has one ſuch ſucker on the edge, and the other has two on the ſide. Theſe veſſels can be pointed outwards, and retracted, when the worm is ſtill alive *; and the ſucking which is felt by patients in the bowels, ariſes probably from them. Beſides other ſervices they may be of to the worm, it is curious to find how thick a joint grows on being put into tepid milk. It grows almoſt to an incredible length in the human inteſtines; I have myſelf not ſeen more expelled of it at once than 160 feet, but others have ſeen 600 feet. Doctor *Van Doevern* mentions, that a peaſant, after having taken an *emetic*, vomited up 40 *Dutch* ells of tape worm, and would have got clear of more if he had not been afraid of puking out all his guts, and for that reaſon bit the worm off. Hence it is plain that it lodges in all the inteſtines, both *craſſa* and *tenuia*, nay likewiſe in the ſtomach. Theſe are frequently obſerved in dogs; but Doctor *Raulin* has found a tape worm 16 feet long in the third of the *inteſtina tenuia* of a dead body.

When a tape worm firſt comes out, it is always ſomething longer and broader than a little afterwards; one can alſo obſerve a reptile motion in it when it is expelled alive, how it alternatively grows broader and more narrow, and that the edges of it are tumbled as it were like waves; and that is the tumbling or undulating motion patients complain of who are infeſted by this worm. One would ſometimes think it quite dead after being expelled, though it is ſtill alive. I have frequently tried this even after its having laid on a plate in the window for twenty-four hours; for when I put

* Confer Mr. *Kœnig* in *Actis Helvet.* Vol. i. p. 28.

it into a bowl, and poured on it ſome warm water, its creepings and motions were immediately to be obſerved, but on pouring a little cold water on it again, the motions ceaſed, and the worm appeared to be dead; and in this manner I repeatedly could make it torpid and revivified again. After many repetitions of cold and warm water, a very thin ſkin, which the animal is wholly covered with, was at laſt ſeparated. That it has feeling, I often obſerved by pricking it with the point of a pair of ſciſſars, for when ſtill alive, it immediately begun to move, and its articulations to grow ſhorter and broader. It being provided with ſmell, will beſides other inſtances, appear from the experiment by Mr. *Kœnig*, l. c. One would think it an eaſy matter to draw out the whole worm when already a part of it appears, but I know it to be impoſſible: for tho' one ever ſo gently endeavours to perform this, the patient begins to feel as a number of balls were in the belly, and ſuch an itching that it cauſes convulſions if one does not immediately give way to the worm, or cut him off; if one then ties a ſilk thread to the worm, it will be dragged up in the body two or three yards, but at laſt falls off and ſoon gets out.

By this we partly find why this worm is ſo difficult to expel, which difficulty is probably increaſed by the power it is provided with, in keeping itſelf faſt by the ſucking veſſels above mentioned. Beſides, the animal adheres with its ſmall end in men as well as in dogs and fiſh, ſo that it cannot without great difficulty be looſened. This ſmall end is probably the common mouth to the worm, for each articulation has its proper mouth, that is to ſay, the above mentioned ſuckers, Mr. *Wepfer* has obſerved a worm to adhere ſo cloſely to the inteſtines, as leeches do, when they are ſucking blood. (*De cicuta aquatica*, ch. iii.) Confer *Herrenſchward*'s Letter to *V. Swieten*, in his Comment. iv. p. 739.

Doctor *Tyſon* (*Philoſ. Tranſact. Abr.* T. iii.) ſaw a living tape worm in an opened dog: the broader end of the worm lay looſe in the *inteſtinum rectum*, but the ſmaller end was ſo adherent to the firſt of the *inteſtina tenuia*, that it was with difficulty he with his nail could ſcratch him looſe. It faſtened itſelf to the inteſtine again as before, and muſt be ſeparated in the

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ſame manner. Hence we find that one cannot be ſure of having got rid of the tape worm, if every part of the ſmall end has not alſo been expelled. For if ſomething ſhould remain, it would ſoon increaſe again; nay if one ſingle joint only ſhould remain, it might grow to a long worm. There is a probability of its growing ſometimes ſo long that it has not room in the inteſtines, but a part of it muſt go out. Sometimes a part of it pines away or dies, which may then eaſily be carried off by the excrements or medicines. It is certain, that the articulation itſelf, or a joint of it, is ſometimes ſo corroded, that growing more and more ſlender, it at laſt goes off: I have obſerved this to happen in two different ways, for the corruption has either begun at both the edges, and in a form of two half moons advanced to the middle till their meeting there, or it has begun in the middle and advanced to both edges, leaving there only one or the other fibre. This may therefore be the cauſe of pieces of tape worm being frequently carried off without the aſſiſtance of remedies. It is now alſo a matter out of diſpute, that this ſort of worm is to be met with in other places beſides the human inteſtines. We heard before that it has been found in water and fiſh, which is confirmed by men of veracity, (ſee the Royal Swed. Acad. of Sciences, year 1747, p. 113.) It has alſo been obvious in the inteſtines of dogs, cats, lambs, hens, geeſe, pidgeons; nay, Aſſeſſor *Darelius* has found it in the bowels of a quite new-born and opened whelp. This makes me apt to believe that one might be born with the tape worm, as I myſelf know two daughters, their mother and grandmother, to have been affected with the tape worm. This becomes more probable by the experiments *Van Dæveren* has collected in his Diſſertation *De vermibus Inteſt. Hominis*, p. 31. and by what Mr. *De Lille* relates of his daughter, eleven weeks old, from whom worms were expelled, though ſhe had not yet fed on any other thing but her mother's milk. The late Profeſſor *Brendel* in *Gottingen*, preſerved in ſpirits a number of ſmall *lumbrici*, which were found in the *inteſtina tenuia* of a fœtus prematurely brought to the world. See *Pallas*, ch. i. p. 59.

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The fourth ſpecies is called by *Archiater V. Linne*, *Aſcaris Lumbricoides*, (*Syſt. Nat.* Edit. xii. p. 1076.) It is in all circumſtances reſembling the *Aſcaris vermicularis*, by being pointed at both ends, but it is about a quarter of a yard long. This has commonly been confounded with the *lumbricus teres*, or inteſtinal round worm.

The fifth ſort is the *Faſciola inteſtinalis Linnei*, *Syſt. Nat.* Edit. xii. p. 1078. Doctor *Montin* has expelled it from a lady, and well deſcribed it in the Swed. Royal Acad. of Sciences for the year 1763, p. 113. It is thick, with a longitudinal *ſulcus* or notch on each ſide. Theſe notches conſiſt merely of a number of impreſſed ſhrivelled dots. The larger end of this *faſciola* is obtuſely angulated, but at the other, it is gradually attenuated to the extremity of the point, with which it is ſo exceſſively adherent in fiſhes, that it is commonly torn off when it is to be taken out with the guts, unleſs the fiſh be put in very cold water. Its edges have fine rings, which are felt very ſharp when you rub it all along, eſpecially on thoſe pieces which are rigid. This is probably the cauſe of the cuttings, which the patient complains of at each ſtool when the worm is going off. Doctor *Montin* made experiments with this ſort of worms taken from fiſhes: when he put them on ſtrong blazing charcoal, they extinguiſhed the fire two or three times by their ſlime before dying; and were often found to endure ſtrong flames for two minutes. Beſides, the Doctor ſpeaks of a gentlewoman in *Holland*, who, on eating a bream's tongue, luckily felt ſomething ſtrange in the mouth, and ſpitting it out, it was found to be a living *faſciola*.

Here may likewiſe be added the ſixth ſort, which by our induſtrious obſerver, Mr. *Anton. Rolandſon Martin*, is called *Gordius*, the knot or thread worm; the body of it is cylindric, pointed at both ends, but one of them is more acute, and the worm ſtretches it out till it is quite fine and ſubulated when one pours any thing warm over the animal itſelf. This worm is of a white colour, except the laſt mentioned point, which is paler than the other parts. The exterior ſkin is nearly of the ſame colour, but the interior parts or the *inteſtinum* is ſtill paler; therefore it appears in ſpirit of wine as

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linen threads cut ſhort. It makes various contortions, and the ſmaller end of it ſeems to be the principal inſtrument in moving the body along, and there is probably its mouth. It enters the air-bladder of the fiſh, in order to grow there and propagate. The biggeſt are an inch long, and the older are more tough and enduring than the younger. They pierce the air-bladder, which nevertheleſs remains equally diſtended as before: afterwards they go through the guts, liver, and the gills.

Mr. *Martin* has found theſe animals in (*gadus virens Linn.*) a ſpecies of cod-fiſh, (*ſalmo fario*) in trout, herrings, and in (*ſalmo eperlanus*) ſmelts. The appearance of ſmall rolls of thread, which one meets with in the meſentery or the white-roe of herrings, is no other thing than theſe *gordii*. Its food is probably the *chylus*. For the above reaſon the inhabitants of *Helſingfors* in *Finland* always open the back of the ſmelts, and take out the air-bladder before they venture to eat that fiſh.

Mr. *Martin* himſelf is troubled by this gueſt, and has communicated the following ſigns of it: That the noſtrils itch, eſpecially towards night; that the ſpittle aſcends to the mouth; that vomiting ſometimes comes on inadvertently, night ſweating, uneaſy ſleep, ſpaſms in the liver and about the milt, by which winds aſcend, attended with pain about the *præcordia*, redneſs on the cheeks, ſometimes more ſo on the left one than the other: the patient grows anxious, indiſpoſed to all kind of work, timid, peeviſh, and ſometimes in a paſſion without reaſon; the body is heavy and fatigued, ſo that one has not ſtrength to lift moderate burdens; the ſtomach is puffed up and diſtended; both before and after having had ſtools, one feels pain under the ſhort ribs, and vomits ſlime, eſpecially after the ſtools. However Mr. *Martin* looks upon the itching of the noſtrils and the ſlimy vomitings as the ſureſt ſigns of being affected with this kind of worms. A more minute account of this is given by this gentleman in the tranſactions of the Roy. Acad. of Sciences for the year 1771.

All theſe five ſorts, I fancy, will ſeldom be found in one perſon. But I know a poor man's child of four

four year's old, who was very lean and weak: on receiving a little dram of barley-brandy from the mother as a cordial, it immediately after voided an innumerable quantity of *aſcarides*, eight feet of a ſlender tape-worm, and ten worms of the ſecond and fourth ſort. Theſe gueſts being expelled, the child recovered ſtrength and a jolly appearance.

Worms are more obvious in perſons on certain years than otherwiſe: and when any epidemical diſeaſes appear, one will be quite amazed at the vaſt numbers of them which the ſick void upwards and downwards. This was the caſe with a great number of horſemen and ſoldiers who returned home ſick from the campaign in *Finland* in the year 1743. It is not eaſy to determine whether it aroſe from their drinking unclean water, or if a previous mild air had promoted a more copious brooding of the eggs, or whether there was any other cauſe then favourable to the propagation of the worms. A minuter inquiry and obſervation ought to be made on ſuch occaſions. But ſo far we know, that in curing ſuch an epidemy, it is neceſſary to endeavour to deliver the patient from ſuch new gueſts, who alone are ſufficient to ſtir up a fever, or to increaſe that which one is already affected with, or to make it irregular, cauſe gripes, a diſtended ſtomach, delirium, convulſions, *&c.* * Mr. *Van Doevern* had under his care, in the autumn of the year 1752, a robuſt ſoldier who had the ague. During one of the paroxyſms the patient got a hideous trembling, eſpecially in the arms, likewiſe a particular laughing, quick but low, trembling, and ſometimes intermitting pulſe. *Van Doevern* therefore adminiſtered an emetic, by which a large round worm, together with much ſlime, was voided, and after that the ſymptoms ceaſed, and the ague itſelf ſoon after. Confer Dr. *Faxe* in the Narrative to *Coll. Med.* 1765. p. 184.

The pains which are cauſed by worms ariſe, 1. from the large ſize and great number; for the larger and more numerous they are, the greater ſhare of our nou-

* See *Hiſt. Conſt. Epid. Verminoſæ*, by *Van den Boſch*, 1769, 8vo.

riſhment they partake of. Hence ariſes the great appetite in thoſe who have worms, eſpecially if it be the tape-worm, the patient being ſometimes ſo hard taken that he faints away if he does not immediately get a piece of bread. This is alſo a reaſon that he will be always indiſpoſed in the mornings if he is only uſed to make one meal in a day, as dinner for inſtance; but he will make it out tolerably well, if he uſe breakfaſt and ſupper beſides. [See the Tranſact. of the *Swed.* Roy. Acad. of Sciences, year 1747, p. 119.] Therefore a woman big with child, who has the tape-worm, muſt eat more than another, in order to avoid being troubled by it.

2. It ariſes from their lying together in a heap, ſurrounded with much ſlime, which we commonly call a worm's neſt: hence it happens that the bowels are either dilated or ſhut up, by which, the wind being confined, are occaſioned the colic, vomiting, and the dreadful diſeaſe called *miſerere.*

3. From the exhalations from the worms and their excrements, all which, being heterogeneous and eaſily putreſcent, may cauſe a diarrhœa, dyſentery, or ſevere fevers, if together with the chylus they be abſorbed into the blood. The ſame diſorders will happen if thoſe animals die in the body, and are not immediately expelled.

4. Great pains muſt alſo be cauſed by worms when they pierce the inteſtines and fall into the cavity of the belly. How this is effected is not exactly known; but that it is a matter of fact is very well atteſted by many phyſicians of veracity. [See the Anatomical Diſſertations of *Von Haller*, Vol. VI. p. 718. and the Tranſact. of the Roy. *Swed.* Acad. of Sciences, year 1747, p 104.] Such is ſuppoſed to have been the caſe with *Herodes Agrippa.* See the Acts of the Apoſtles, c. xii.

5. But worms are chiefly troubleſome by their motions, creepings, and ſucking. They move of their own accord when they are hungry, or when they are irritated by food or medicines which they cannot bear, and then ſeek for a retreat, or faſten themſelves cloſe to the bowels. In general, worms cannot bear ſalt food, as ſalt ſalmon, ſour wines, diſhes ſeaſoned with onions and leeks, nor aniſe, liquorice, ſugar, and mead.

mead. Milk is reliſhed by them; but, though it ſometimes pacifies the pains, it ſometimes increaſes them; which latter probably ariſes from the greedineſs of the worms, creeping from the more diſtant parts of the inteſtines in order to reach the milk in the ſtomach. As both the ſtomach and inteſtines are tender and irritable, therefore the motions and ſuckings of the worms may cauſe ſpaſms, nauſea, bitter taſte, white tongue, a preſſure under the breaſt, anxiety, vomiting, rumbling in the inteſtines, belly diſtended, tender ſtomach, gripes, and ſometimes looſeneſs, ſometimes coſtiveneſs, ſucking in the ſtomach, *&c.*

Now, as the ſtomach and bowels communicate with all the other parts of the human frame, therefore the irritation of the worms is ſufficient to bring the whole body in diſorder. When ſpaſms are more univerſally ſpread, we get ſhiverings; when the reins are contracted, it cauſes the urine to ceaſe entirely, or at leaſt to grow pale; if conſtrictions happen in the throat, one is diſabled from ſwallowing. From hence alſo ariſe all the other pains which phyſicians frequently have obſerved in thoſe who are affected by worms: for inſtance, a ſmall and ſometimes intermittent pulſation, beatings or palpitations of the heart, faintings, vertigo, difficulty of ſpeaking diſtinctly, (ſee the Tranſ. of the *Sw.* Roy. Acad. of Sciences, year 1747. p. 111.) loſs of ſpeech, blindneſs, ſounding in the ears, fearfulneſs, loſs of good humour, ſtupidity, delirium, ſpaſms during the ſleep, troubleſome dreams, uneaſy agitations of body and mind, anxiety and hideous thoughts, *ſingultus*, convulſions, epilepſy, and apoplexy. We have inſtances of thoſe who all at once have grown raving mad, but quiet as lambs again as ſoon as the worms were expelled. We have found that the interruption of the regular evacuations particular to the other ſex has been frequently owing to theſe animals. The milk of nurſes will often dry up too ſoon, if they be affected by worms; their teats then burſt, as it often happens to the lips, and will be ſurrounded by a pale ring. Dr. *Spigelius* relates of a noble lady who was not married, but got nauſea and longings as a pregnant woman: her belly ſwelled, and the menſtrua quite ceaſed. She was examined as a woman big with child,

and

and was judged to be ſo: therefore no remedies being given, the patient pined away and died, by the ignorance of others and want of nurſing. She was opened and found innocent; there being no fœtus in the womb: but there was found a quantity of ſlime and water in her bowels, as alſo a worm as long as the inteſtines themſelves. For this reaſon thoſe phyſicians are very much in the right who ſay, that there is not any diſeaſe ſo ſevere and uncommon but what may be occaſioned by worms. Therefore if any uncommon and unaccountable diſtemper ariſe on a ſudden, they juſtly inquire if there be any ſigns of worms in the patient. Theſe I am now going to enumerate in general, and afterwards endeavour to point out, by which one may find out the particular ſpecies of worms the patient is infeſted with.

Signs of worms in general are: a frequent changing of complexion in the face, alternately from pale to red; blue ring under the eyes; tickling or itching in the noſe; frequent pains in the head, which come on immediately after one has begun to eat; the mouth found full of water when one awakes in the morning, and ſaliva ſpilt on the pillow during the night; inquietude and ſpaſms during ſleep; the patient generally reſts on his belly, grinds his teeth, and behaves in his ſleep as if he was ſwallowing ſomething; ſits upright during the ſleep, ſpeaking and calling out, but lays down again and ſleeps quietly; thirſt in a morning; frequently ſubject to faintings; frequently vertiginous; ſoundings in the ears; he has ſometimes a nauſea and diſguſt for food, but at other times, and moſtly, a great appetite; ſtinking breath; rotten and corroded gums: beſides there enſue vomitings, oppreſſions under the heart, gripes and pinchings chiefly about the navel; ſudden ſwellings and tenderneſs of the belly, and rumblings in it; one feels a ſucking internally, and a ſort of trembling motion; ſometimes great looſeneſs, ſometimes coſtiveneſs; ſtinking excrements; one eats hearty commonly, as was before obſerved, but nevertheleſs the body remains lean; finds one's-ſelf worſe in the mornings, eſpecially if neither ſupper nor breakfaſt has been eaten: ſuch patients are always more indiſpoſed during the beginning

and end of the wane of the moon; they feel an itching in the anus, ſometimes to ſuch a degree that they faint; or have frequently vain efforts to ſtool: they are ſullen, anxious, and unapt to their cuſtomary offices: ſometimes peeviſh contrary to cuſtom, they do not know what they will; they have a difficulty of ſpeaking plain, and ſometimes are not able to utter a word: ſome grow raving mad, *maniaci*; ſome fools; (ſee Eph. N. C. Dec. III. A. III. Obſ. 135); others get convulſions without any apparent cauſe, and without knowing any thing about it: the mouth is foaming when theſe convulſive motions are violent, otherwiſe not. Others grow ſtiff in their whole body, lying in fainting fits, awake with ſome violent ſpaſm, then grow delirious, afterwards falling aſleep, again awaking within a ſhort time with quite ſound underſtanding, and feel no other indiſpoſition but ſome weakneſs. Some of them drink often; ſome have a dry coughing, nearly reſembling a chincough (Commerc. Lit. *Norimb. Anno* 1732. p. 46.). They lie under great difficulty in recovering their ſtrength, after having been ſick; *palpitatio cordis* often affects them. Dr. *Alex. Monro* ſays, that a greater dilatation of the pupil is one of the ſureſt ſigns: (ſee the Comment of Baron *V. Swieten*, IV. p. 721.) Alſo it is a pretty certain ſign, if one on a ſudden grows ſick, and is inſtantly relieved by drinking a glaſs of very cold water. The reaſon is obvious by what has been ſaid of the effect of cold water on *lumbrici*, *tæniæ*, and *faſciolæ*. But the ſureſt ſign of all is worms, or parts of them, having been voided.

Nobody can expect to meet with all theſe ſigns in one ſingle perſon; it is ſufficient if many of them appear: conſequently I was in the right to ſuppoſe a girl, ten years old, to have worms, becauſe ſhe eat heartily, but grew lean, was pale, and had a blue ring under the eyes, and was confined to her bed with pains in her knees and legs at the beginning of ſeveral wanes of the moon. The anthelmintic powder mentioned in the ſequel of this chapter cured her. I knew likewiſe another child to grow lean, and often to fall ſick without any apparent cauſe. But when it awaked in the morning it was always found to have lain on the belly.

belly. Purging pills, with calomel, being given, diſcovered it to have a thin and ſlender tape-worm. *Van Doeveren* makes mention of an otherwiſe healthy child, twelve years old, who on a ſudden got fainting fits, ſpaſms, convulſions, and a faint epilepſy, and after that a quotidian ague. He gave it to drink water in which quickſilver had been boiled. Two large round worms *(lumbrici)* were voided, and thereby all the violent pains ceaſed. Our learned *Lindeſtolpe* was conſulted concerning a young miſs, ten years old, who complained of a lancinating pain, moſtly on the left ſide: ſhe had a dry cough, ſome heat, ſtrong pulſe, great thirſt and dryneſs in the mouth, and ſometimes a pinching in the ſtomach; ſometimes ſhe loſt her ſpeech, and had ſpaſms. *Lindeſtolpe* looked upon all theſe as an effect of worms, and ordered ſome anthelmintic powders. Having taken two of them, ſhe got affected with ſuch violent ſpaſms two days after, about noon, that her feet were nearly contracted up to the back. The paroxyſm being over, ſhe felt no more pain, but ſlept till night. Her mother, then putting the bed to rights, found there a worm a foot long, twiſting and tumbling itſelf like a ſnake. It had crept out quite dry, and probably during the violent fit. She got rid of ſeveral ſkins and empty pieces of worms after that, and was quite recovered: (ſee his book on worms, p. 20.) When any one begins to feel uneaſineſs and rumblings in the inteſtines, chiefly as if he was diſtended by wind on one ſide, and gets oppreſſions under the breaſt, with anxiety and peeviſhneſs; and on taking a large doſe of wormwood extract, finds that the oppreſſions diſappear always with a rolling motion in the ſide; then one may be certain of being affected with worms. Mr. *Delius*, in his *Amœn.* p. 349. makes mention of a youth who got affected with pains in the right thighs and loins, ſo that the right foot was turned inwards, and he limped. The parents thought that the joint was diſlocated: but the doctor took notice of the young man's having a hard ſtomach, and often pains in it; his mouth being ſometimes filled with water; the noſe itching, and his urine reſembling whey. Hence worms were judged to cauſe the lameneſs, as well as the other complaints, and the

patient was actually cured of all by expelling the worms.

But in order to know and diſtinguiſh what particular kind of worms a patient is affected with, we muſt obſerve the following ſigns: The tape-worm cauſes a ſucking in the inteſtines, and the patient feels as if ſomething living was there, which has a tumbling or rolling motion. He is affected by a heavineſs on one ſide, as if there lay a roll, or large ball. With the excrements ſometimes ſmall pieces are voided, which, when they are parts of the ſpecies with ſucking veſſels on the edges, reſemble cucumber or gourd ſeeds; or, according to *Archiat. V. Linne*, they have the appearance of the *ſemina cardui*. But he ſays that the joints of the other ſort, with the ſuckers on the ſides, reſemble barley-corns: (ſee *Amœnit. Acad. de Tænia*). Such pieces or joints above-mentioned are chiefly voided after having taken a purge, or eaten much of carrots, or drank birch-juice, or after ſucking much of the interior and younger bark of pines in the ſpring.

Particular ſigns for diſcovering the round worms are pinchings and gripes, chiefly about the navel; and ſometimes a ſkipping (*motus ſaliens*) in the body. But ſigns of the *aſcarides* are, itching in the *anus*, frequent vain endeavours to ſtool, and a ſullen and pettiſh humour. It is beſides neceſſary to obſerve, that thoſe who have worms of either kind are not conſtantly affected by them, but only at times; ſo that one is conſtantly troubled by theſe gueſts at the end of the wane and in the very beginning of the increaſing moon *.

If for the preſent there be no opportunity of attacking the worms, but one only chuſes to palliate the pains cauſed by them, the following methods will do to carry ſuch a point: 1. The patient may drink one or two

* I do not aſcribe this to the influence of the moon (ſee *V. Halleri Elem. Phyſiol* VII. p. 11. and 152.); but I only know by experience that it happens at that time; and I have frequently thereby been able to tell the date, when an almanack has not been at hand. Worms have perhaps certain times to move on, as the *aſcarides*, for inſtance, are troubleſome only in the evenings.

pints of milk while it ſtill retains its natural warmth as it comes from the cow; for boiled milk will not ſo eaſily ſtop the pains: Or, 2. One may preſcribe an emetic, ſuch a one as is mentioned in the chapter on the hooping-cough. I have thereby relieved many children from violent pains during the paroxyſms. The following caſe only will be ſufficient: In the year 1752, a girl, four years old, voided a round worm in the morning. For one-and-twenty days running, after that, ſhe began to ſhriek exceſſively from ſeven o'clock every evening till eleven at night, complaining of pain in the belly only. The phyſicians who were preſent employed the beſt remedies known againſt worms with all due care, but without effect. Being conſulted, I adviſed the mentioned emetic powders to be given juſt when the ſhrieking began. She has afterwards taken ſeveral anthelmintics, chiefly when ſhe was ſucceſsfully prepared and inoculated for the ſmall-pox in 1758, but neither worms nor ſigns of them have appeared ſince. To full-grown perſons I have preſcribed thirty or forty drops of *tinct. antihyſt. Durietti* to be taken in a little wine or brandy during the fit, when round worms were ſuppoſed to cauſe anxiety, faintings, and ſmall convulſions. But when I had reaſon to ſuſpect the tape-worm as the cauſe of wearineſs of the mind, anxiety, preſſure under the breaſt, and a diſtention of wind; I always ordered one or two ſpoonfuls of wormwood extract to be taken in wine, which was attended with that good effect, that the preſſure and diſtention quickly diſappeared, with a rolling motion in one of the ſides *.

But ſuch remedies procure only a relief for the preſent; they do not remove the cauſe, unleſs a vomit, by the internal motions it cauſes, ſhould ſhake the adhering worms from their abode and expel them. That this frequently happens, we find by the caſes Mr. *Brouzet* relates in his book *De l'Education Medicinale des Enfans*, II. p. 60. and by Mr. *Vogel*'s Diſ-

* Perhaps a table-cloth dipped in cold water, and applied on the ſtomach, would have the deſired effect, to make the worm torpid or quiet.

ſertation *de Uſu Emeticorum ad expellendos Vermes*. Gott. 1765. Therefore we ought likewiſe to know how to kill and to expel worms out of the body.

The *aſcarides* are often expelled by eating raw carrots, or drinking birch-juice, or by ſucking the juice of the young bark of fir, till one gets a looſeneſs: alſo by tying a ſtring to a piece of freſh pork, introducing it into the *inteſtinum rectum*, and pulling it out again after a little time; for a number of theſe worms will then always follow. This muſt be done repeatedly, changing the pork at each time, in order to evacuate them all. One may likewiſe eradicate them with clyſters of tepid milk and a little ſalt, or with our common mineral waters and ſalt *; likewiſe with

* Dr. *M. G. Heberden*, in the Medical Tranſactions of *London*, Vol. I. mentions a patient whoſe pains were ſtopped by injecting a little warm milk. *Teneſmi* and ſlimy ſtools ceaſed when milk and oil were injected. After having taken half a dram of rhubarb, mixed with as much cinnabar, he always voided a quantity of ſlime, reſembling the white of an egg, and with that followed a great quantity of theſe worms, and much more than when the rhubarb was taken alone. The *aſcarides* are ſometimes very difficult to eradicate. Dr. *Heberden* relates, in the fourth Memoir for *February*, 1757, that a patient got affected with a violent pain in the ſtomach, attended with nauſea, obſtruction, reſtleſsneſs for the moſt part, and nearly an intire loſs of appetite. He grew very thin, and had ſcarce ſtrength to walk or ſtand on his legs; his ſtomach was hard, and contracted to the back; the urine was always milk-coloured, and the ſediment of it white; his excrements were hard, reſembling ſheeps-dung, and could not be voided without aſſiſtance. After having tried many remedies to no purpoſe, he, by the advice of ſome perſon, diſſolved two pounds of common ſalt in half a gallon of ſpring-water, and ſwallowed all within an hour. He was immediately taken ill, got a preſſure over the ſtomach, violent vomiting, and by the fourth reaching brought up a quantity of worms; ſome of which were *aſcarides*, but ſome reſembled thoſe which are found in horſe-guts, of the ſize of a wheat-corn: then, after having been coſtive for a fortnight, he got ſix or ſeven copious ſtools, voiding ſtinking and bloody excrements, together with a quantity of ſimilar worms. He

with a clyſter of a drachm of fine ſugar and an equal portion of rats-dung, well rubbed together, and mixed with tepid milk (not boiled), to be injected five or ſix nights running.

The following clyſters will likewiſe prove a good remedy: Take one pint of water and an ounce of quickſilver, boil it gently in a covered earthen pot, and add a little honey to it. This, being injected repeatedly, will certainly deliver the patient from theſe gueſts.

But the moſt efficacious remedy is a clyſter of tobacco-ſmoke. See Medical Obſervations, Vol. II. p. 307.

Lumbrici teretes, or inteſtinal round worms, are not ſo eaſily expelled as the former. The remedies againſt them ought to be given, 1. At the beginning and at the end of the wane of the moon. 2. To be ſwallowed at the hour one is uſed to breakfaſt; for, as the worms are accuſtomed to feed at that time, one may the more eaſily cauſe them to ſuck or feed on that which is given to kill them. 3. The remedies ſhould be given in tepid milk, or weak mead, or in quickſilver water; and, a little before a ſtool is expected, one ſhould inject a clyſter of a half-pint, or a pint, of warm milk, with an intention to allure them to deſcend lower down in the inteſtinal tube. 4. Some people think that the worms would hide themſelves, or ſhun the medicine, if the patient has prepared it himſelf, or ſmelled at it; therefore that ſhould be avoided. 5. If one intends to attack the worms by internal remedies, one ought not then to apply external anthelmintics; for the worms would likewiſe in that caſe take ſome ſafe retreat.

He ſoon recovered, and the third day after took another ſuch doſe of ſalt with almoſt the ſame effect, voiding worms, but dead ones. After which he enjoyed a good ſtate of health. However, for greater ſecurity, he took half a pound of ſalt in a pint of water two or three days before each new moon. If he had taken ſmaller doſes he would have avoided much pain, and by degrees have gained the ſame point.

But if the patient, a little after having ſwallowed the anthelmintic, ſhould get affected with ſevere pains and ſpaſms in a fixed place in the lower part of the *abdomen*, it ſignifies that the worms have retired to that part, and are going to pierce the inteſtines. Then they ought immediately to be driven from that place by applying *petroleum* externally, oppoſite to the pain *; or one may have a cake ready prepared of wormwood-buds, garlick, rye-flour, and freſh ox-gall; put it into thin linen and apply it moderately warm as the former. 6. When one intends to adminiſter remedies againſt worms, the patient ought, for ſome days before, to abſtain from feeding on any kind of diſhes of milk; but ſhould feed on hard, coarſe, and ſalt food, leek-porridge, horſe-radiſh, purſlane, high-ſeaſoned food, and the night before on a piece of ſalt herring, without drinking after it. The former ſerves to weaken the worms, and cauſes them to deſcend into the lower inteſtines, ſo that they are more eaſily expelled; the other allures them to ſuck more eagerly of the anthelmintic medicine.

The powder I have commonly made uſe of againſt this ſort of worms is as follows:

℞ *Sal martis Lond.* *gr.* iv.
Sem. ſantonici *gr.* x.
Rad. jalappæ c. ſaccharo opt. pulveriſ.
Mellis puriſſ. *ana gr.* xx.
M. f. pulvis ſubtiliſſ. Dr.

This is the doſe for a full-grown perſon, and is to be taken at breakfaſt-time, as was obſerved. If the patient does not mind how it taſtes, I add to each powder a drop of oil diſtilled of tanſey. If his body is not eaſily unbound, we increaſe the doſe with five to ten grains of jalap. But we diminiſh the doſe of that root, in caſe the patient is eaſily moved. It is always neceſſary to rub the jalap very well with ſugar, previous to its being taken alone, or mixt with other

* The author of the *Landarzt* (the country phyſician) mixes *petroleum* with oil of turpentine.

remedies,

remedies, in order to prevent gripes. The doſe, for a child, of the above-mentioned anthelmintic powder, is a tea-ſpoonful the firſt day; and, if that does not procure ſufficient ſtools, the doſe is to be increaſed, the next day, with a half or a whole additional tea-ſpoonful, according to the circumſtances of the child. When the powder begins to operate, the patient is to drink a glaſs of cold water after each ſtool. It is to be taken three days running, at the beginning and the end of each wane of the moon, and conſequently one may fetch ſix powders at once from the ſhop. One may beſides drink a pint, or more, of the following quickſilver water, on theſe days, in order to make the ſurer of expelling the worms.

Take *radix graminis*	℥ij.
The yellow of orange-peel	*gr.* xxx.
Winter's bark	*gr.* vi.
Freſh water, a gallon.	

Boil it till a fourth part be evaporated. Let it be ſtrained, and ſtand, together with two ounces of quickſilver, in a covered earthen pot, on a moderate warm place over night. Decant off the water in the morning, and add to it a little clarified boney, ſuitable to the taſte of the patient.

I now hear that hyſſop has acquired a great repute againſt worms. A woman drank of it as a tea againſt her cough, and gave her child alſo ſome diſhes of it each morning. The effect was, that a great many worms were expelled.

When the patient cannot ſwallow powders, I am uſed to preſcribe the following pills:

℞ *Extract. tanaceti*		
Sem. cinnæ pulveriſat.	*ana*	*gr.* vj.
Sal martis		*gr.* iv.
Reſin. rad. jalappæ opt. c.		
amygd. trit.		*gr.* vj.
Olei tanacet. diſtil.		*gutt.* j.

M. f. pill. pond. gr. ij. *fol. argent. obduc.*

Theſe eleven pills are the doſe for a full-grown perſon. A child may take three, four, or five, according to

its ſtrength. Thoſe who can take both pills and powders do beſt to take pills in the evening and powders in the morning; but in that caſe there ſhould be no jalap in the pills; ſo that they will be only eight in number.

If we can neither prevail on children to take the powder or pills, we let them frequently take *confectio ſemin. ſantonici*, or we beſtrew bread, or bread and butter, with honey and theſe kinds of ſeed, and order them to drink quickſilver-water, ſometimes giving of the rhubarb elixir two mornings running. If we cannot at all prevail on them to take any thing, we may try on their ſtomach the cake I have already mentioned, and procure ſtools by milk clyſters *.

When the pains return, at the next change of the moon, perhaps the child may be perſuaded to take ſomething elſe; therefore we take, for inſtance, three or four grains of *vitriolum martis*, and diſſolve it in two ſpoonfuls of water, adding ſome honey. The child is to take it each morning on an empty ſtomach, and after that we give, on the two laſt mornings of the decreaſing moon, either the elixir of rhubarb, or *elixir proprietatis Boerhaavii cum aceto*, in ſome mead or honey-water. This laſt remedy colours the excrements black, on account of the iron; but no one need to have any apprehenſions or fear on that ſcore. Or we may make ſmall pills of *aſſa fœtida*, *vitriolum martis*, and a little honey, gilding them, and giving two or three at a time once or twice in a day. The patient muſt now alſo purge the laſt day of the wane of the moon by the above-mentioned drops. By theſe remedies the guts are conſtantly filled with the bad ſmell and taſte,

* Two ſorts of ſeed, under the name of anthelmintic ſeed, are ſold in our ſhops: the one ſort is *ſemina zedoariæ*, the other *ſem. ſantonici*. This is very minute, and intermixed with ſo many ſtalks and pieces of leaves, that the doſe of the ſeed itſelf becomes but very little. Therefore the *Archiater V. Linne* thinks that one ought to ſubſtitute the ſeeds of *abrotanum campeſtre*. I hope our apothecaries will readily follow this good and reaſonable advice.

which

which makes the abode of the worms inſupportable to them, ſo that they muſt fly. The pills may be taken in ſtewed apples, or ſimilar things: Confer *V. Swieten's* Comment. IV. p. 733. If one rather will purge by powders than by the drops, we preſcribe twelve, fifteen, or twenty grains of the powder of jalap, rubbing it, as above directed, with an equal portion of ſugar, and add to it a drop of *oleum cinnamomi*, dividing it into two equal parts. This gives a quick and copious opening.

Mr. *Biſſet* recommends very much againſt worms, chiefly of this ſort, the leaves of *helleborus fœtidus Linn.* or *helleboraſter max. Ger.* giving fifteen grains of dry leaves in powder to a full-grown perſon; or he prepares of their juice, together with ſugar, a ſyrup, of which he gives about a drachm, more or leſs. See his Eſſay on Medical Conſtit. p. 235.

Dr. *Brown* has already, in the year 1757, in his Natural Hiſtory of *Jamaica*, held the *ſpigelia anthelmia Linn.* to be an incomparable remedy againſt worms, even when they have cauſed a fever and convulſions. Two handfuls of the herb are boiled with two pints of water till one pint be evaporated: this being ſtrained, the drink is made palatable with a little lemon-juice and ſugar. Of this he gives the patient two, three, or four ounces every ſixth or twelfth hour during three days. After that a purge is adminiſtered, which he aſſures us will certainly expel the worms. Mr. *Brown* informs us that his potion cauſes the patient to ſleep as opium does; but that the patient awaking is quite refreſhed, and his eyes ſparkling. A phyſician in *Ruſſia* has likewiſe found very good effects of this remedy. I have alſo heard Profeſſor *Bergius* recommend it. The king's phyſician *Dalberg* praiſes it a great deal in a letter to me, mentioning a lady who was very much affected by worms and anxiety. By means of the *ſpigelia* and purges ſhe was freed from thirteen *lumbrici* this laſt ſummer. He preſcribes this herb in powder to twenty grains two or three times in a day, and as tea from one to two or three drachms during the ſame time. In this manner he lets the patient continue for a fortnight, giving

him

him a laxative, together with the *ſpigelia*, every third or fourth day. He aſſures us that in this doſe the remedy neither cauſed ſleep nor any trouble whatſoever.

I have often preſcribed a tincture of one ounce of *ſemen ſanton.* bruiſed, and one pint of *ſpiritus vini rectificati.* After having ſtood together for a few days, it is to be ſtrained, and the moſt *ſpirituoſum* to be evaporated. In this I diſſolved a little pure *ſal martis*, and with good effect gave a tea-ſpoonful of it at a time to children in the morning during the wane of the moon, and the two laſt days a purge was given prepared of jalap, as above-mentioned.

Profeſſor *F. G. Fiſcher* recommends much an aqueous extract of green walnuts, which he ſays killed round worms within two minutes. He diſſolves two drachms of the extract in four drachms of cinnamon water, and gives fifty drops of it to a child of two or three years of age. After ſix or eight days he preſcribes a laxative mercurial.

Doctor *De Lille*, in his book of the throbbing of the heart, gives great encomiums to a mixture of *extract. hellebori nigri*, twenty grains; *vitrioli martis*, ten grains; diſſolved in an ounce of *aqua cardui benedicti*; to which may be added a little violet-ſyrup, or honey, one drachm. The doſe for a child is about a tea-ſpoonful, to be taken on an empty ſtomach.

Garlick is a good remedy for thoſe who can bear it. One may, for inſtance, on an empty ſtomach, ſwallow two or three cloves, or eat them with bread and butter, or cut them in ſmall pieces and take them in milk. Many children have likewiſe been cured of worms, by ſwallowing two, four, or ſix ſpoonfuls of the ſalt pickle of butter. By continuing the uſe of this remedy for ſeveral days running, it has cauſed them a looſeneſs and carried off worms. The ſame effect will follow after having eaten plentifully of raw carrots: alſo by drinking birch-wine in the ſpring till it cauſes a looſeneſs. Sucking of young bark of fir in the ſpring is attended with the ſame ſalutary effect.

Although

Although a number of worms ſhould already be expelled by any of theſe remedies, one ought nevertheleſs to continue the uſe of them for ſome wanes of the moon running, in order that none of theſe animals or their eggs may remain in the body. Beſides, our endeavour muſt be to reſtore ſtrength to the ſtomach and bowels; which may be done by letting the child take thirty, forty, or ſixty drops of *tinctura rhei amara Pharm. Edinb. ſ. vino*, for ſome weeks. When that did not prove ſufficient, I preſcribed the *vinum chalybeat. Lond.* to be uſed in the ſame doſe for a few weeks.

If any one gets affected by worms during the time he has ſome inflammatory fever, I preſcribe quick-ſilver water, and, inſtead of honey, make it palatable with *ſyrupus acetoſitatis citri*; or he may drink tea with lemon-juice in it, or tea with marmalade of limes; or one may take two parts of oil of olives, one part of lemon-juice, and one part of pounded ſugar, well mixed together, and take a tea-ſpoonful four or five times a day; or his drink may be ſoured with a little *tinctura violarum*. I alſo apply on his belly the above-mentioned cake of wormwood and ox-gall, *&c.* And as worms cannot bear camphire, and that remedy, together with vinegar, is very proper in hot fevers, the following drink will become effectual: Take camphire one drachm, pour on it fifteen drops of brandy, which, by rubbing together in a ſerpentine ſtone mortar, is eaſily reduced into a powder; to which add two ounces of ſugar finely pounded, and diſſolve it all in ten ounces of good vinegar. The doſe is a ſpoonful, to be taken once or twice within the ſpace of two hours.

The tape-worm is the moſt difficult to expel intirely; partly on account of its length, and the many bendings, turnings, or coils of the bowels; partly on account of the power this worm is endowed with of keeping himſelf faſt to the inteſtines with the point of his ſmaller end, and with his ſuckers between each articulation. This is the cauſe of the patient's being ſo hard taken when one endeavours to expel this worm. It would eaſily be removed, if we knew any remedy proper

proper to kill it without corroding or hurting the inteſtines; for it would then be carried off with the excrements, as no longer adhering to the guts. Such a remedy is ſtill unknown. We have before taken notice how this worm moves about in a veſſel when one pours warm water on it, but that in the ſame moment one uſes cold water in the veſſel it falls down to the bottom, and lies motionleſs as if dead: therefore I thought that it could be expelled by giving a purge, and letting the patient drink plenty of cold water juſt when the phyſic was going to operate; from this reaſon, that as the cold water had a power to benumb it, the worm would thereby be diſabled from moving his ſmall point, or from erecting and retracting his lateral or marginal ſuckers, and conſequently unable to keep itſelf faſt, ſo that the purge might carry it off without reſiſtance. I communicated this opinion of mine to Aſſeſſor *Darelius*. He had then the care of the poor ſick people who yearly uſe the mineral waters at *Sätra* by means of a charitable foundation. Therefore I deſired this gentleman to try, at an opportunity given, if I had judged right. Two weeks after that he ſent me a tape-worm, which he had expelled from a poor ſervant-woman in the above manner. It was thirty-four feet long, was whole, and its ſmall end was likewiſe intire, and terminated with a little point, had four holes or *foramina* on the ſides, which then were plainly ſeen with Mr. *Cuff*'s magnifying glaſs, and may ſtill be diſtinguiſhed by the naked eye, it being ſtill preſerved in the collection of the hoſpital at *Upſal*. Dr. *Darelius* expelled more worms after that from ſeveral other patients, and the purges he preſcribed were no other than powder of jalap in the morning, and *tinctura catholica purgans Rothii* in the afternoon. Several other patients were cured in the ſame manner, both when Aſſeſſor *Lindhult*, and after him Profeſſor *Sidren*, had the inſpection of the ſame mineral waters. Were it only poſſible that the water could preſerve its chillneſs in the ſtomach and bowels for an hour, or even half an hour, or if we could know exactly when the purge would have its full effect, and that we then could make plenty of cold water paſs quick-

ly

ly from the ſtomach down to the inteſtinal tube, this remedy would never fail. But as it is not practicable, we are obliged to uſe this method repeatedly, and I am convinced it will prove effectual to proceed as follows.

When the patient who has the tape-worm is arrived at the mineral waters, and has reſted for twenty-four hours after his journey, he may begin as uſually by taking a purge, and then drink of the mineral water for a ſe'nnight. As he probably then is accuſtomed to bear the cold water, he muſt early in the morning take a purge, for inſtance half a drachm or two ſcruples of root of *jalap*, or two or three half ounces of *Sel de Seignette*. When he finds it is going to operate, he muſt drink a glaſs of cold mineral water at a time, every third, fourth or fifth minute, without minding whether the doſe amounts to one or two gallons, for the quantity cannot be inconvenient, as it is quickly carried off by the ſtools. One ought not to drink it too faſt, as drinking too much at a time prevents its paſſing quickly down from the ſtomach into the bowels. If then the tape worm be voided perfect with its ſmall end, the cure is performed; but if not, or only parts are carried off, we repeat the purge next morning in the ſame manner, and if neceſſary beſides, in the afternoon, take ſixty or one hundred drops of *tinctura catholica purgans Rothii*, well mixed with a ſpoonful *ſyrupus ſpinæ cervinæ*. This will hardly ever fail of expelling it, but in ſuch a caſe the patient is to reſt for a couple of days, and drink only his uſual doſe of water in the mornings. Then he begins with the purge for two mornings running again, as before was mentioned, and ſo further during the whole courſe of uſing the mineral water.

A gentlewoman who had the tape worm, was pleaſed to aſk my advice, and at my deſire to give a ſuccinct account of her diſeaſe, which partly as confirming what is above mentioned, partly as giving ſeveral uſeful obſervations on the ſubject, I take the liberty to inſert literally as follows:

"My parents have told me that I had been trou-
"bled by worms in childhood, but I myſelf do not
"recollect

" recollect any diſtemper ſooner than in the year 1740, " being then twenty years old. You know, Sir, that " it was then much in faſhion to drink bitter water; " I drank it likewiſe, I do not know why, if not for " freckles. Three or four weeks after I was attacked " by an inflammatory fever, attended with frequent " convulſions; the fever was cured, but the convul- " ſions returned at times through the whole year. I " did not then in the leaſt ſuſpect or think of any tape " worm, nor do I know what remedies I uſed. But " in the year 1741, in the ſpring, yourſelf ordered me " milk whey and expreſſed juice of *Beccabunga* and " *Cochlearia*. This I uſed for five or ſix weeks, and " it really did me a great deal of good, nay quite re- " vived me for a few years. In the year 1747, I " choſe to drink the mineral waters of the park with- " out having the leaſt reaſon to it by any diſeaſe. I " muſt likewiſe confeſs that I drank it without keep- " ing order or diet. Four weeks after that I happened " to drink a glaſs of *Moſelle* wine, which was a little " flat, and very much diſagreed with me, ſo that I " was immediately taken ill after it, and within an " hour ſwooned away. In the night I was affected " with violent pinchings about the navel, and a hi- " deous pain higher up under the orifice of the ſto- " mach, which went away and returned alternately " during five days. I then determined of my own " accord to take a purge, and in conſequence of what " you had told me concerning the *eſſentia catholica pur- " gans Rothii*, I mixed a double doſe of it with a ſyrup, " and took it on a day when the fits were moſt ſevere. " After half an hour the medicine operated very vio- " lently, and at laſt carried off ten feet of a tape worm, " which was the firſt I ever had ſeen, and which you " know, I ſent to you. After that the pinchings " ceaſed, ſo that I got ſome reſt, but much weakneſs " followed.

" In 1748, I drank the mineral water of *Norr- " malm* for ten weeks; I voided frequently pieces of " a tape worm, but never unleſs I had taken a doſe " the above mentioned purging eſſence, which now " did not cauſe ſo much pain as the firſt time, perhaps

" becauſe

" becauſe the cold water had weakened the worm.
" After having taken this or any other phyſic, I am
" very much ſubject to reachings; I prevent them by
" eating or drinking ſomething cold. On the days I
" took a purge during the courſe of the mineral wa-
" ters, I drank of it the whole forenoon a great deal
" more than the ordinary doſe, continuing as long as
" the phyſic operated, which I found to do good. In
" this ſummer I got rid of forty feet of the worm;
" therefore I uſed this purge for a long time after
" whenever the worms plagued me, but at laſt
" it had no further effect on them; no more had the
" *pulvis cornachinus*. You adviſed me then, Sir, to
" take ten or twelve drops of *oleum animale dippelii* in
" the evening, and ſome purge the next morning. This
" I did now and then for a couple of years, and al-
" ways with that good effect, that a part of the worm
" was expelled at each time, when I had taken *oleum*
" *animale* beforehand, otherwiſe not. At laſt the
" *oleum animale* became ſo nauſeous to me, that I was
" quite tired with it.

" In the year 1753, I reſolved to perſecute the worm
" ſeriouſly at the mineral waters of *Norrmalm*; I took
" every night a doſe of *ſemina cinnæ*, which during
" the firſt eight days was mixed with *flores ſulphuris*,
" but I was obliged in the ſequel to leave the ſulphur,
" becauſe it cauſed heat and uneaſineſs at night;
" nevertheleſs I found it to be a good anthelmintic, as
" it diſturbed the worms. I took a doſe of phyſic every
" third day, ſometimes the *cornachine* powder, ſome-
" times *ſel de ſeignette*, of which laſt I found the beſt
" effect. I had learned by the former year's experi-
" ence, to take a moderate doſe; for it is remarkable
" that when I took it too frequently or very much,
" the worms did not go off. It was always neceſſary
" to drink water for a couple of days firſt, in order to
" weaken or perhaps to waſh the worm lower down in
" the inteſtines. Therefore a little after having taken,
" as I mentioned, a laxative every third day, I drank the
" cold water from ſix to ſeven quarts. This never
" failed to carry off a part of the worm. On the days
" I did not take any purge, I only drank three quarts.

" With

" With this I continued for five weeks, and had dur-
" ing that time got rid of one hundred and ſixty feet
" of the worm; the largeſt piece that was expelled at
" once was forty feet long. I believe that a part of
" the worm was voided beſides of the appearance of a
" ſlime, as the marks of the worm were to be ſeen
" in it. Nevertheleſs I was very much weakened by
" this cure, ſo that I grew very thin though I made
" four meals a day, and a long time paſſed before I re-
" covered.

" In 1754, I made uſe of the ſame mineral wa-
" ter and remedies, but I took phyſic only once a
" week, which always expelled ſome yards of the
" worm, but I neglected then to meaſure it. After
" this I found myſelf tolerably healthy for ſome years,
" but as I recollected you had told me once that
" I could not be free from the worm, if the ſmall end
" of it was not expelled likewiſe, therefore I reſolved
" to drink ſome mineral waters again in 1758. But
" I then went into the country, and uſed a ſpring
" water, which according to ſome experiments, was
" ſaid to reſemble very nearly that of *Norrmalm*. As
" this made my body bound, I ſometimes drank two
" or three glaſſes of bitter water, and a couple of
" times I took of the before-mentioned purges, but
" no worm was now voided; whether this was owing
" to the water, or it not being drank cold enough, or
" my not taking any *ſem. cinnæ*, I cannot tell; but in
" the autumn the worm, which had hitherto for a long
" time been for the moſt part quiet, began now to
" plague me almoſt every day more or leſs. It con-
" ſiſted in my being affected in the forenoons by an
" oppreſſion under the orifice of the ſtomach, and
" preſſure over the ſtomach itſelf, by which I am ſo
" hard taken, that a cold ſweat is ſpread over the face,
" and I am nearly ſwooning, though it does not
" proceed ſo far. This is however of no long dura-
" tion, but the returns are frequent; nevertheleſs it
" continued once a fortnight in that very autumn, ſo
" that it likewiſe awaked me in the nights. I have
" now taken the reſolution to uſe the ſame remedy as
" in 1753, when I get an opportunity, hoping by
" that to eradicate the worm.

" At your deſire Sir, I will add ſome particulars:
" In the morning when I get out of bed, I am obliged
" carefully to avoid being cold over the back, other-
" wiſe I immediately would feel a cutting as it were
" round the navel, ſo that I muſt contract the body,
" not being able to keep it ſtreight. Then there is
" beſides a faint rumbling noiſe over the back; this
" having continued for an hour or more, a *diarrhœa*
" enſues, by which it is over for that time, but may
" return ſeveral times in a day, and at each time it is
" attended with the very ſame ſymptoms. Sometimes
" it continues for ſeveral days together alternating in
" the above manner; but I am now uſed to ſtop it in
" the beginning, by going to bed again when there is
" an opportunity to do it. I continue in bed for a
" couple of hours till I am well warm, by which I
" am ſecured for that day. The ſame ſymptom en-
" ſues after having eaten milk or ſomething ſweet.
" The worms trouble me moſt in the forenoon; if I
" have had no pains then, I am free for the reſt
" of the day. This made me think it owing to
" my not having eaten; but I found that eating would
" not help when the worm choſe to be troubleſome.
" Nevertheleſs I have commonly avoided hunger, as
" the worm then plagues me by his ſucking; it like-
" wiſe troubles me more at the end of the wane of the
" moon, and at the beginning of the increaſing moon,
" and I have found equal effect from the remedies,
" taking them on either of theſe times; it alſo plagues
" me on the days which are troubleſome to my ſex.
" When I eat no fleſh for ſupper, but only other looſe
" food, I am awaked in the night by a violent ſucking
" under the breaſt, and in that caſe I frequently have
" been near ſwooning away; and notwithſtanding the
" ſtomach has been quite empty, I have been unable
" to eat, but cured myſelf by a glaſs of freſh ſmall
" beer. I have found it adviſeable to eat no milk.
" Once when I avoided milk for ſix years time,
" it affected me much if I at any time taſted of
" it. During the years I thought myſelf free from
" the worm, I began to eat milk again without the
" leaſt inconvenience, till the year 1759, when the

" worm began to be troubleſome again; I apprehend " its having gained new ſtrength and growth by the " milk. All kinds of dry fiſh, eſpecially when they " have been ſoaked in lye, diſagree with my ſtomach, " and I have happened to grow indiſpoſed even by the " ſmell. All rich food, ſugar, or confections, make " me indiſpoſed; ſweet wines excite nauſea, alſo " bread made with wort. But tea, coffee, ſalt and " ſmoaked food, nay all ſorts of leeks and onions, " have not at all diſagreed with me, which perhaps " you will think ſingular. Bread ſoaked either in " ſoup, or ſweetened in ſmall beer, or in tea, diſ- " agrees with me, ſo that I am obliged always to " eat it dry.

" Though I drank a doſe of bitter water in " the year 1750, it never expelled any part of the " worm, nor have I obſerved any thing like cucumber " ſeed to go from me; but one year I voided a vaſt " many very ſmall worms with red heads (or *aſcarides*); " theſe were carried off by clyſters, but not by the " purges. My ſtomach does neither ſwell nor con- " tract itſelf inwards to the back, but it grows hard " when the worm keeps itſelf higher up, or when by " any fault in diet or otherwiſe I have excited a fit; " then I am obliged to looſen my cloathes round the " breaſt and the body, nay even to take the necklace " off. All purges pain me much, and cauſe pinch- " ings and gripes, which I think ariſes from the " uneaſineſs of the worm. They generally cauſe " *nauſea*, which however will ſeldom burſt out into a " vomiting; but if it has enſued, it ceaſes as ſoon " as the purge begins to operate. The worms were " one time near going off by the way of the throat, " but I prevented it with a draught of cold water. " *Semin. Cinnæ* does not affect me at all, it rather " gives me reſt. Perhaps the worms fly from it and " deſcend lower down.

" You likewiſe aſked me to tell the circumſtances " of its going off: I never got rid of any part of it " without the aſſiſtance of a purge; this being taken, " I can feel the worm about the orifice of the ſtomach, " and then I am affected likewiſe by the above men-

" tioned

" tioned oppreſſions. But a little nearer towards the " time it is going off, I can feel it to proceed down- " wards gradually; and in the ſame proportion I am " taken with pains in the lower part of the *abdomen*, " and feel a chilline ſs downwards all along the back. " I think I have diſtinguiſhed by the pain it cauſes, " how the worm reſiſts as it were its going downwards, " and how it endeavours to keep and ſuck itſelf faſt, " which chiefly cauſes great pain. But the relief " that follows at the inſtant the worm goes out of the " body is equally great, and then there is a ſenſation " of cold in the *anus*. That part of the worm which " firſt comes out, is not ſmooth, but appears to be " corroded, and is by no means ſo freſh as that which " is torn off afterwards, which generally is done juſt " in the articulation. One muſt, though gently, lay " hold on that part of the worm which firſt comes " out, in order to prevent its retracting and return- " ing into the body again, and that one might not " loſe the opportunity of putting out a part of the " worm; for though ſeveral ſtools ſhould ſtill enſue, " no more of it will appear that day. At laſt, when " no more can be extracted, I feel a ſtoppage in the " back, and a ſnapping noiſe is heard when it burſts " off."

The concluſions that are to be made from hence are obvious. I only want to mention this worm to have been of that ſpecies which has ſucking veſſels on the ſides, and the broadeſt I ever ſaw.

The larger the pieces that are voided of the worm, the leſs pain will be cauſed by the remaining part, and I know patients to have been undiſturbed for years together, after having voided ſeveral yards.

I have likewiſe learnt by experience, that the worm cannot bear ſalt or ſmoaked beef, nor any ham, ſalted ſalmon, ſour krout, nor any food ſeaſoned with onions or leeks, or horſe-radiſh, nor bread made with wort, nor ſour wines; nor can it bear garlic, *aſſa foetida*, *ſem. ſantonici*, *flores ſulphuris*, *preparata* of iron, or extract of wormwood, but it then deſcends lower down in the inteſtines. If one drink and eat ſuch things only for ſome days, the worm would likewiſe be weakened by

hunger; then taking *anthelmintics* beſides, and after that a purge, the worm will ſpend all its ſtrength by its motions, and by keeping itſelf faſt, ſo that the purge being repeated the next day, we have a greater chance of expelling it. Still greater would the chance be, if the patient had ſtrength enough to take the ſecond purge on the ſame day, in the afternoon, for then the worm would have had no time to recover.

On this foundation the patient muſt chuſe, 1ſt, the beginning or the end of the wane of the moon; 2d, for a few days before, only live on the above mentioned food and drink; 3d, on the ſame days he is to take every ſecond or third hour, ten of the following pills.

℞ *Extract. Tanaceti,*
Aſſæ Fœtidæ,
Sem. Santon, ana ʒß. *et gr.* vi.
Vitrioli Martis, - *gr.* xii.
Mellis Sinceri, - *q. ſ.*
M. f. pilulæ pond, gr. i. *fol. argent obd. Dr. Sc.*

With theſe pills one continues till the oppreſſion under the breaſt is relieved, and inſtead of that comes on an illneſs in the lower part of the belly, and a chillineſs downwards; for that ſignifies the worm's deſcending. Then our endeavour muſt, 4th, be to drive it out: for this purpoſe we preſcribe, for inſtance, to a child eight or nine years old, according to its ſtrength, from twelve, fifteen, to twenty grains of the root of jalap previouſly well powdered with ſugar, to be taken at once; the following day one muſt take a ſimilar doſe, or rather a few grains more, if the former was found too weak, drinking a glaſs of cold water after each ſtool. A full grown perſon can bear twice as great a doſe.

Dr. *Herrenſchwand*'s powder has, for theſe many years, been regarded as an infallible remedy againſt the tape worm; he has at laſt diſcovered it to be prepared ſtronger or weaker of the following ingredients: *radix filicis*, from 15, 20, to 30 grains; *gummi guttae* from 1 to 5 grains; *gratiola* from 5 to 12 grains; three

ſuch

ſuch powders ought to be kept ready. The day before they are to be taken, he gives the patient *mercurius dulcis* and *diagrydium ſulphuratum*, of each ten grains. The following day in the morning he gives the firſt powder, which commonly cauſes a vomiting, and effects a ſtool beſides. The ſecond powder he gives after two hours, which cauſes a ſtrong opening, and thereby the whole worm is generally carried off. But if not, then the third powder is to be taken two hours after. It happens ſometimes that the worm does not go off ſooner than the next day. Between each opening he gives the patient ſome thin ſoup to drink. He has always been able to expel the firſt ſort of tape-worm whole and intire, but the other ſort, or *ſecunda ſpecies Plateri*, only by pieces. He ſays, in a letter to me, that he never preſcribes theſe powders before he has tried if the worm be ſtill remaining: this he does by giving an ounce of a ſyrup prepared of *flores perſicariæ*; for, if the worm remains, ſomething as ſmall as white corns will be found in the inteſtines. Every one may find that the compoſition is good. The *radix filicis* has at all times been recommended againſt the tape-worm. If that has a power of killing it, or prevents its holding faſt, the *gummi gutta* and *gratiola* will be very well calculated for expelling it; for both of them purge quickly and violently. And it is natural to think that the remedy given the day before, and then the three powders taken one after another in one day, muſt weaken the worm ſo much that it muſt yield at laſt.

When the circumſtances are managed in the above manner, it will almoſt be indifferent what purges we employ, provided they take effect quickly and ſtrongly. Therefore Dr. *Nitret* was able to expel eighteen whole tape-worms from that woman I mentioned before. With the help of a little *ſpiritus vini* he made five pills of *ſcammonii veri* twelve grains, *reſinæ jalappæ* ſix grains, and *turpethi mineral:* two grains. Three of theſe pills were given on the tenth of *September* in the morning, and the reſt an hour after. Theſe expelled ſeven whole tape-worms, all ſtill alive; the next day nine, and a dead one in the evening. But

as ſhe was not yet recovered, he gave her again ſuch another doſe of pills on the fourth of *October*, adding half a grain of *turpeth. miner.* to them. On the ſixth of *October* ſhe voided another worm: but continuing ſtill indiſpoſed, he let her repeat the ſame pills, which expelled dead cucumber worms *(vermes cucurbitini)* and a great number of living *aſcarides:* ſo that at laſt the cure was performed.

Baron *Van Swieten* had heretofore preſcribed theſe pills for a young man, with an intent to cure the venereal diſeaſe, and they happened to expel a whole tape-worm. He afterwards preſcribed the ſame remedy againſt this worm, and that frequently with ſucceſs: but, as it affects the patient violently, he only gives it twice in a month. If it be repeated three times, the worm will commonly follow. See his Comment, Vol. IV. p. 737.

The late Dr. *Haſſelquiſt*, in his Travels to *Paleſtine*, mentions that the tape-worm is very common in *Ægypt*, and that the fourth part of the inhabitants of *Cairo* are affected by it, eſpecially the *Jews* and the common people. The beſt remedy they know of is *petroleum*, of which they take twenty or thirty drops at a time in water, three of the laſt days running in the wane of the moon, and on the fourth a purge. If this ſhould not carry off the worm, the patient waits till the end of the next wane, when he repeats the remedy. This has perhaps given the country phyſician *(Land Arzt)* the hint to his method. He relates, p. 423. that a man uſed, for a fortnight together without effect, ſeveral remedies after his preſcription againſt the tape-worm, and voided only ſmall pieces. At laſt the country phyſician ordered *petroleum* and *oleum terebinthi*, half a drachm of each, to be taken in three doſes. But the patient, thinking that it might be too little, and being tired with remedies, ſwallowed all at once with ſuch good effect, that the whole worm was expelled together. Soon after he adviſed a woman, who had the tape-worm, to take thirty-five drops of it in a morning; and, in caſe that had not the deſired effect, that ſhe ſhould take forty drops towards noon: upon which ſhe immediately voided eighteen feet of a dead worm.

When

When only a part of the worm comes out, one muſt gently pull on it till it ſtops. Then the patient muſt lie down on a narrow bed, and tie a weight to the worm, which will weigh it down but not tear it off. This is to hang out of the bed, and the patient to lean on his right ſide. If he then has patience, he will get rid of the whole worm, or at leaſt a great part of it, eſpecially if he makes the worm paſs through a wooden tube, which antecedently has been anointed with oil, and applied a little way up in the *anus*, in order that the *muſculus ſphincter ani* may not ſqueeze off the worm, which would otherwiſe eaſily happen.

A little while ago I was told that a man in *Calmar* was ſo hard taken by the tape worm, that he in his anxiety endeavoured to kill himſelf on ſeveral occaſions, but being well watched he was always prevented. At laſt ſomebody gave him three powders which expelled a tape worm, and thereby his pains and anxieties were cured. The compoſition of theſe powders were diſcovered to me in conſideration of a little ſum of money, and is here communicated as follows:

Take fine pounded and ſifted ſea coals, one drachm and a half, and an equal quantity of fine grains of gunpowder, but not pounded, and ſeven pepper corns made into a fine powder, mix to the former, and divide the whole in three parts, giving one each morning in brandy three days running when the worm is troubleſome. One muſt ſwallow one or two ſpoonfuls of brandy after it, but not eat or drink any thing. If theſe powders do not effect great motions in the lower part of the belly, the doſe muſt be increaſed next time. If the worm does not then go off, one muſt take forty grains of powder of jalap root in water, on the fourth or fifth morning.

I will ſtill mention another method by which a gentleman got rid of that ſpecies of tape worm which has ſuckers on the ſides. He has now ever ſince the year 1748, not had the leaſt ſigns of worms. The cure conſiſted in that he, 1ſt, took from two to three cloves of garlic at a time, twice or four times in a week, ſwallowing them down on an empty ſtomach, ſometimes in tea and ſometimes in cold water; 2d, he took a

ſtrong exerciſe on horſeback once or twice in the week, or he undertook ſome long journey; 3d, he took now and then half a wine glaſs full of *eſſentia* or *teſtamentum hiærneri* mixed with an equal portion of white claret. The account of the patient himſelf is inſerted in the Tranſactions of the Royal Swediſh Academy of Sciences for the year 1760; and I thought the following copy of it likewiſe deſerved a place here.

" In the year 1747, when in the autumn I com-
" pleated forty-four years, I began to obſerve an un-
" eaſineſs and rumbling in the bowels, eſpecially in
" the left ſide. And as I thereby was diſtended by
" wind, which cauſed oppreſſions under the breaſt,
" it was always attended with ſome anxiety and wear-
" ineſs. This I aſcribed to ſome fault of the ſtomach,
" endeavouring to cure it with extract of wormwood,
" which I myſelf made very ſtrong, partly by wine,
" and partly by brandy: this had its good effect, ſo
" that the oppreſſions and diſtention diſappeared with
" a motion in the left ſide, which in the beginning I
" thought to be wind. I obſerved at this time ſmall
" white pieces reſembling cucumber ſeeds ſometimes
" to go off with the ſtools, but I did not know if it
" had any ſignification or not. In 1748, I got a
" violent *diarrhœa*, I do not know by what accident;
" then it was the tape worm appeared for the firſt time.
" I was quite diſconcerted, thinking it to be a part of
" the inteſtines, nevertheleſs I pulled ſoftly on it,
" continuing, as it did not cauſe any pains but rather
" relief, till at laſt it burſt off four feet long; this
" piece lived ſtill and moved. I did not care any
" thing more about the matter, as I found myſelf bet-
" ter, and always had a good appetite, thinking myſelf
" now free from the worm. But I ſoon learned the
" contrary after having had a ſtrong exerciſe on horſe-
" back, for the worm appeared, and I pulled out a
" long ſtring of it till it burſt; this piece lived like-
" wiſe, and made ſeveral ſwingings on being waſhed
" in milk warm water. After this time I became
" anxious how to get rid of this diſagreeable gueſt
" which always plagued me at leaſt a few days each
" month. On my ſide I entertained him with eſſences
" of

" of wormwood, and never eat myſelf either milk nor " ſweets, becauſe I obſerved this to cauſe uneaſineſs " in the left ſide. This ſame year I was adviſed by a " friend to uſe garlic in the mornings on an empty " ſtomach. I begun immediately in the ſummer, and " ſwallowed two or three cloves at a time, cut in ſmall " pieces, two, three or four times in a week, which " I waſhed down ſometimes with tea, ſometimes with " cold water. As a purge I uſed the *elixir* (or *teſta-* " *mentum*) *hiærnerii*, mixed with white claret, of " which I took a wine glaſs at a time, which procured " two or three ſtools. In the month of *September* I " went to *Jamtland* on account of my office, and dur- " ing the journey, I uſed the garlic, and ſometimes the " mentioned elixir, which by a ſtool one time carried " off a tape worm without its being torn. I examined " this narrowly, and did not find it to have the leaſt " motion. After that I found myſelf very well both " during my ſtay in *Jamtland*, and after the return to " *Stockholm* firſt in *October*. In the beginning of *No-* " *vember* my office required my preſence in *Gottenburg*, " and once during the journey having made a good " breakfaſt and driven a couple of miles, I felt a vio- " lent preſſure in the lower part of the *abdomen*, a " violent opening followed, and I voided a large lump " of the tape worm; notwithſtanding ſeveral experi- " ments with it, I could not diſcover in it the leaſt " ſign of motion or life. Ever ſince that time I never " felt any ſigns or ſymptoms of the tape worm. Before " I got rid of it, I always felt an unuſual ſucking in " the ſtomach, and creeping in the left ſide if I got " my victuals ready a little later than uſual. I like- " wiſe had always a good appetite during this time, " and did not grow lean neither."

In the ſame tranſactions for the year 1747 it is likewiſe mentioned what an excellent effect the abovementioned elixir had againſt a tape-worm on a boy in *Abo*.

That garlick is a very powerful remedy againſt the tape-worm, and that it at laſt kills it, I have given inſtances of in the Tranſactions of the Royal Academy of

of Sciences for the year 1760, p. 186. and the following. Which deſerve a place here alſo.

A lady, twenty-five years old, who during the whole year of 1755 was affected by anxiety and a ſort of deſpair, frequent ſhedding of tears, convulſions, and frequent returns of fainting, was at laſt relieved by the uſe of *Spa*-water from the *Pouhonner* ſpring, and grew tolerably freſh by degrees, though ſhe had been very pale, and ſtill continued lean. She repeated the uſe of this water apparently with ſome good effect. In the year 1759 ſhe grew ſickly again, and uſed various things, in the place where ſhe then lived, with good effect, ſo that a piece of tape-worm appeared. It was of that ſort which has ſuckers on the ſides. Nevertheleſs ſhe was ſeverely affected ſometimes.

At the beginning of the year 1760 ſhe conſulted me about her diſeaſe. I adviſed her to ſwallow one or two cloves of garlick, and to drink *Spa*-water again the next ſummer. She continued uſing garlick every morning till the month of *July*, when ſhe began to drink the aforeſaid water. After having drank of it for ten days, ſhe undertook a journey of ſeventy-five Engliſh miles, reſted one day, and began to drink the water again every morning, though it was with much difficulty that it would continue on her ſtomach. In this place ſhe got ſtrawberries, which always purged her the day after, ſo that the third morning, after having begun with the water again, ſhe got violent ſtools, with gripes, and a ſevere head-ach, and, before ſhe had well finiſhed her bottle, the whole worm in a lump was carried off from her, together with his ſmall end, which terminated in ſuch a point as I have deſcribed; but, having no magnifying-glaſs at hand, I could not ſee the four ſmall holes. The joints of this worm were very ſhort. The lady afterwards continued the courſe of her mineral water, which cauſed no more nauſea: her appetite alſo, which had been loſt for a long time, returned now; and a fortnight after, when I had the honour to wait on the lady again, ſhe had regained her freſh hue, and ſeemed likewiſe to grow fat.

In

In conſequence of this I hope ſhe has no more worms, having, ever ſince this, enjoyed a good ſtate of health. Immediately after the worm's being voided, it was put into a bowl with milk-warm water in it, but no other part of it moved than the ſmaller end and a few inches in the middle. On pouring a little warmer water on it, a reptile motion was obſerved in the ſame parts, but the others were dead. Then I poured cold water on it, which deprived the other parts of their motion alſo; but they began to move again, upon a repetition of warm water.

From hence I conclude that the greater part of the worm was dead, and, in conſequence of another caſe, I have reaſon to think that the garlick had killed it, and that this ſort of worms would intirely be killed by this remedy, if one continues the uſe of it for a ſufficient time. The lady had uſed it for ſix months, and thereby the greateſt part of the worm was killed, being thirty-two feet long. For notwithſtanding the ſmaller end might be more tough than the reſt, it is reaſonable to think that it would alſo have been killed by continuing to uſe the garlick for another half year, in caſe it had been wanted, and not been expelled before that. The ſhaking during the journey had probably driven it together in one lump; in which caſe it touches a ſmaller ſurface of the inteſtines, and with a leſs number of ſucking-veſſels; and conſequently is leſs able to cling faſt. The expulſion of it here was ſtill more eaſily effected by the greater part of it being dead. Strawberries, eaten in the afternoon during the courſe of a mineral water, always purge the following day in the forenoon, and that very violently ſometimes, and with ſo ſevere gripes, that one is obliged to quiet it with ſome cinnamon brandy. Here the ſtrawberries took the ſame effect as a purge, and expelled the worm, of which the ſtill living part was moſt probably ſo benumbed by the cold water that it could not reſiſt.

The drops of rhubarb which I have ſo frequently mentioned may be prepared according to Aſſeſſor *Darelius*'s Pharmacopœia for the pariſhes, p. 239. but when they are to be given againſt worms one may prepare them as follows:

℞ *Rad.*

℞ *Rad rhei alex.* ℥iij.
Paſſul. maj. exac. ℥j.
Flaved. cort. aurant. ℥ ß.
Rad. liquerit. ℥ij.
Cardamom. min ʒiv.
Hydrom vet. ℔ ij.
Conciſ. contuſ. mixt. digere per quatriduum col. expreſſ. adde
Extract tanaceti ℥ ß.
Sacchar. alb. ℥iij.
Dr.

CHAP. XXIII.

ON THE RICKETS.

THE rickets are known to affect a child already in a high degree, when its head and the veins of the neck are large, a flaccid pale tumour ſpreads over its face, but the reſt of the body grows lean, the fleſh is looſe and flabby, the abdomen ſwells, eſpecially on the right ſide, and the bones are tumefied at the joints: the diſeaſe is in a leſs degree according as the above ſymptoms are fewer; but when the fleſh beſides is ſo flaccid that the child cannot walk, then the rickets are at their utmoſt height, and called *rachitis completa.*

This diſeaſe ſeems likewiſe to be new. It appeared firſt in *England* in the counties of *Dorſet* and *Somerſet*, during the interval of the years 1612 and 1620, and was firſt deſcribed by Dr. *Gliſſon* in the year 1650. It is not mentioned in the *Engliſh* bills of mortality before the year 1634. From *England* it came over to *France*, and ſome time after to *Holland.* We do not know at what time it firſt appeared in *Sweden.* It has not got any *Swediſh* name, unleſs it be called the *rod* in ſome places, though with others that name ſignifies the *atrophia infantum.* Some of the vulgar have that fooliſh notion, that ſuch rickety children are ſlily given them,

them, in exchange for their own, by ſome diabolical beings, in a human ſhape when viſible, which they ſuppoſe to dwell within the mountains. The *French* call this diſeaſe *noueure*, and ſuch children as have it, *enfans noués*. The *Germans*, as well as the *Swedes*, call it the *Engliſh diſeaſe*.

At preſent there is no place in *Europe* which is exempted from the rickets; nevertheleſs it is more common in low, marſhy, and moiſt countries; therefore ſuch unhappy children are moſt obvious in *England*, *Holland*, at *Paris*, and eſpecially at *Straſburg*: alſo a greater number, in proportion, are found to be affected by the rickets at the fort of *Straſburg*, which is ſituated lower than the town itſelf. Dr. *J. P. Buchner*, who experienced this to his great ſurprize, beſides others, mentions eleven children, born of the ſame parents, having this diſeaſe in a greater or leſs degree. I ſhall, in the ſequel, make uſe of the many valuable obſervations this gentleman had then opportuuities of making.

It is uncertain if a child be ever brought into the world with this diſeaſe; nevertheleſs ſuch an inſtance is related by *L. G. Klein*, in *Nova Acta Acad. Nat. Cur.* V. I. p. 146. I once viſited the child of a poor peaſant, whoſe parents told me that it was born rickety: but there is never any dependence on narratives from people who are ſo ignorant. Moſt likely the diſeaſe makes its firſt appearance at the teething. If the body then begins to grow lean, the ſkin and fleſh flabby, the abdomen ſwells, particularly on the right ſide; the head enlarges, the face grows pale and tumified, with large veins on the neck, and the bones increaſe at the joints; we know that the diſeaſe is already ſevere; for theſe ſymptoms will increaſe every day, if their progreſs be not oppoſed by all poſſible means. The forehead will begin to be prominent, and the whole cranium to enlarge by ample ſutures; the ſkin grows thick and wrinkled, eſpecially at the wriſts; the teeth turn yellow, grow black, and fall out by piece-meal; and the new ones, coming out but very ſlowly and with difficulty, will alſo ſoon grow carious, if the rickets are not ſtopped in time. The *thorax* is compreſſed on the ſides, and the *ſternum* riſes up

ſharp

ſharp and prominent, ſometimes more on the one ſide than on the other; the ribs grow broad and knotty, chiefly at the extremities, where they join to their cartilages. The *claviculæ* grow very crooked, but eſpecially the *ſpina dorſi*, which makes ſeveral curvatures, backwards, forwards, and to the right and left. Several bones grow flat and compreſſed on both ſides, and crooked, as for inſtance the *os femoris*, *tibia* and *fibula*, *radius* and *ulna*; the *oſſa pelvis* are preſſed inwards as it were, and obliquely, whereby this cavity grows narrow; part of the bones do not attain the proportional length, and, what is ſtill more ſingular, ſome of them, that before were hard, again grow ſoft and flexile; inſomuch that we have inſtances of thoſe who thereby were made ſhorter than they had been before; or they grow ſoft in one place, while they become brittle in another, and that to ſuch a degree that the leaſt touch will fracture them. But providentially theſe latter circumſtances ſeldom happen. The muſcles become gradually ſo weak and flaccid that the patients cannot ſupport themſelves and walk. They alſo get affected by a ſlight conſumptive fever, which eſpecially is obſerved in the night-time, and which exhauſts their little remainder of ſtrength. Some have a ſnoring in the cavity of the breaſt, and a humid cough, but they ſwallow the ſlime they hawk up. Others again are only affected by a dry coughing; which latter appeared at the beginning of the diſeaſe of the children of *Th. Moores*. An aſthma alſo comes on, which at laſt grows ſo difficult, that they would be ſuffocated if they were not relieved by ſuſpending them on their arms in the bed. Sometimes they are puffed up on a ſudden in ſuch a manner as if air was let in between the ſkin and fleſh. The water begins to go by drops; or the eyes run, and the ſight is diminiſhed. At laſt convulſions come on, which cloſe the ſcene of this hideous diſeaſe. And it is remarkable, that the body does not grow cold and ſtiff immediately after they are dead. Their blood is very ſlimy and watery, and alſo acrid; and though this acrimony cannot be ſeen, it is nevertheleſs plainly to be diſcovered by its effects, and the cauſe by which it is produced. The *viſcera*, eſpecially

eſpecially the liver and bladder, are much enlarged; the glands of the meſentery are likewiſe large, and indurated; no gall is found in the gall-bladder; the voice is deeper than what their age generally would allow: the wit of ſome far exceeds their years; others again are very ſtupid. Dr. *Buchner* has obſerved theſe latter to be more numerous than the former. The ſtupid ones will bear very ſtrong medicines, but the witty ones not; for the brain of theſe is found firm, but that of the ſtupid, ſoft and watery.

They are commonly very ſleepy, and obliged for the moſt part to breathe through their mouth; they have generally a ſtrong appetite, and are much ſubject to hæmorrhages, convulſions, and epilepſy. Dr. *Buchner* pretends that they ſeveral times get a natural ſmall-pox, which however I never found, and ſhould wiſh to know for certain if it has always been a true and genuine ſmall-pox. Few attain to any height of ſtature; nevertheleſs I have ſeen two that were tolerably large, and their backs not crooked. Sweetmeats, as ſugar, raiſins, alſo apples and pears, commonly make them ſick, and affected with ſhivering, heat, and much vomiting, which may laſt for three or four days together. This is probably owing to the worms that they commonly harbour. It is not yet decided whether a greater number of boys or girls be affected with this diſeaſe. Full-grown perſons very ſeldom get the rickets; nevertheleſs both the Doctors *Du Verney* and *Burgrav* give us inſtances of this. Providentially this diſeaſe is not contagious, and, as far as it is hitherto known, not hereditary. Young ladies, who either are or have been affected with this diſeaſe, ought to conſider well the danger they run in marrying: for, if their *pelvis* has grown too narrow, they will either have difficult deliveries, or their children or they themſelves die in the delivery.

The diſeaſe varies in its degree according to different ſubjects, ſo that ſome have only a touch of it, and, by correcting their diet, changing place, and uſing good remedies, they may live a pretty long time, enjoying a tolerable ſtate of health; though their body generally retains the hurt or maim it has received by the diſeaſe.

The cauſe of the rickets is a relaxation of the ſolid parts; which may, for inſtance, ariſe, 1. From being born of weak and ſickly parents, or of thoſe who have paſſed their time in lazineſs and ſuperfluous living, abuſed tea, ſugar, or fat food; or who have had the venereal diſeaſe, being either not thoroughly cured of it, or enervated by ſalivations. The fate of ſuch is, that their wives often miſcarry, or are brought to bed of dead children, or of ſuch as will one time, more or leſs, be affected by the rickets. 2. Being born of parents who, on account of their great poverty, have lived on too weak food. By this we can account for this diſeaſe being to be met with among the richer and the very pooreſt people, and ſeldom among thoſe of a middling fortune. 3. From being born of parents of a great age. 4. From being educated in a low, damp, and marſhy place. 5. From being ſuckled by a mother or nurſe who has either too old or too thick milk, or in too great abundance, ſo that it changes into bad blood; or when the milk is in too ſmall quantity, or too weak, ſo that the child does not receive ſufficient nouriſhment; or when we give it food which is too coarſe, and difficult to digeſt; or when the child has been exhauſted by ſome inflammatory diſeaſe or ſevere ague. In either of theſe caſes the conſequence is, that the child grows weak, gets an acidity and diſpoſition to the rickets. 6. From being ſuckled by a nurſe who has had the venereal diſeaſe, and is not well cured of it; or who has the ſcurvy, a ſcrophulous or cancerous tumor, or ſome ſecret ſorrow, or that is pregnant, or uſes ſtrong liquors. *Boerhaave* makes mention of a mother who had eight of her children in perfect health, all of them being ſuckled by herſelf; but the ninth, being ſuckled by a nurſe, got the rickets. 7. From confining the child in damp rooms, where they waſh and dry wet cloaths; ſuffering the child to lay on damp cloaths, neglecting to unſwaddle it as ſoon as it has wetted itſelf; or letting it remain for a long time on an eaſy chair, or elſewhere, with naked knees and thighs; alſo from giving it always moiſt food, much ſweet, often mealpap, fruit, and drink during the night, which has con-

contracted a ſourneſs. All this intercepts the neceſſary perſpiration, increaſes the moiſture which is attracted by the pores, creates acidity, and cauſes a relaxed habit. 8. From repelling ſcabs by unguents, and the like; or from neglecting the cure of the hooping-cough or ague, ſo that the child has been afflicted by it for a long time.

The greater the number of theſe cauſes that concur in a child, the more it will be diſpoſed to the rickets; and the longer theſe cauſes remain, the leſs chance will a child have to eſcape the diſeaſe; and *e contra*.

Hence we may prognoſticate whether a child will be ſubject to the rickets, or not; and conſequently have time to take ſuch meaſures as will prevent it. For inſtance: If a father be conſcious of having been affected by the venereal diſeaſe for a long time, and, as commonly happens, uſed ſeveral things againſt it without order and regimen, and conſequently without curing it radically, and has at laſt been obliged to ſalivate twice or thrice; and if beſides he has a ſickly wife, who, after being brought to bed of a living child, puts it out to be ſuckled by a nurſe who has old milk, and is affected by the ſcurvy; he may depend upon it, that his child will either die or get the rickets. Therefore a perſon ought carefully to provide a good nurſe for the child, and further to remove all that might promote the diſeaſe, and beſides employ all poſſible means to prevent it. The *Engliſh* apprehend this diſeaſe to attack a child when it learns to ſpeak, and before it can walk. But it ought to be obſerved, that the more one ſpeaks to a child the ſooner it will learn to talk; and the leſs it be carried on the arms, but is allowed to lie on the floor and endeavour to creep, the ſooner alſo it will learn to walk. The later a child cuts its teeth, the more we ought to fear its getting the rickets; yea though it has before been hearty and healthy, and both learnt to walk and ſtand, nevertheleſs we have great reaſon to apprehend the rickets breaking out at the dentition, whether it is performed with or without ſtartings, if we find that the complexion is very flaccid and relaxed, the ſtomach enlarged, and its breaſt ſomewhat elevated. This ought chiefly to be taken

notice of from the ninth to the twenty-fourth month of its age.

The change which the child goes through at the breeding of its teeth cauſes the diſeaſe then to break out. The *ſpina dorſi* does not grow crooked till the child has already begun to walk. The head grows larger in proportion than the other parts of the body, becauſe the ſutures are relaxed. The body cannot be kept ſtreight, on account of the weight of the head, and the flaccidity of the muſcles. The ſkin of the body is wrinkled, becauſe the fat is conſumed, and the fleſh lax; which laſt is pale alſo, and not red as in healthy people, becauſe the blood is thin and watery. The abdomen is large, high, and diſtended, on account of the inteſtines being larger in proportion, and the ſtomach and bowels being diſtended with wind.

Their aſthma ariſes from the cavity of the breaſt being too narrow for the lungs; partly becauſe it is compreſſed on the ſides, partly becauſe the bulk of the inteſtines prevents the *diaphragma* deſcending as much as is required at the inſpiration. But the greateſt fault is moſt likely owing to the weakneſs and relaxation of the muſcles which ſerve for inſpiration, and to the water which at laſt collects in the cavity of the breaſt and the *cardia:* for inſtance, if the water lodges in the right cavity of the breaſt, the patient cannot lie on the left ſide; and if in the *cardia* he chuſes to lean forwards. The aſthma prevents a free paſſage of the blood from the head and face, and this cauſes the large ſize of the jugular veins and the tumefaction of the face. Their ſtrong appetite ariſes from acidity in the ſtomach, and the acidity from want of gall; which ſcarcity of gall comes from there being no fat, eſpecially in the *omentum*. That they in reality are affected by acidity is plainly diſcovered by their ſour breath, ſour belchings, and by a want of gall. And there is no doubt but that the acidity produces the ſoftening of the bones; for we know, by ſeveral experiments, that bones may be ſoftened and diſſolved, not only by mineral acids, but alſo by vinegar, and by whey prepared by rennet. The hump on the back comes from the *ſpina dorſi* being crooked, and there pro-

prominent. This alſo makes the neck to look ſhorter, and the head to appear as if it were ſunk betwixt the ſhoulders. The body is a great deal ſhortened by the *ſpina dorſi* growing crooked, and that is the reaſon why the arms and the legs appear to be too long. The body is oblique when the *ſpina dorſi* is incurvated at the ſides; the thighs and legs are more crooked than the arms, becauſe the weight of the body muſt be ſupported by the former. The lean conſtitution by no means ariſes from any preſſure of the nerves at their exit from the *ſpina dorſi:* of which we may be convinced by the obſervations of *Valſalva*, *Von Haller*, and *F. H. a Brunn.* Such patients like to ſit and lie down, moſtly on account of the weakneſs of the muſcles, and alſo becauſe the reſpiration is then more eaſy to them. For the abdominal muſcles are leſs tenſe in that poſition, and conſequently leſs reſiſt the dilatation of the *thorax* and the lungs when they draw the breath. For the ſame reaſon they lie with their knees retracted.

The rickets are generally curable whilſt ſtill in the beginning. But very good attendance and nurſing of the child is required, and all that might promote the diſeaſe muſt carefully be removed: for there is ſcarce any cure to be expected, if negligence, backwardneſs, and want of reſolution be found in thoſe whom it concerns; if the room be not kept clean, the ſeaſon very rainy, and there be no opportunity of nurſing and educating the child in a dryer and more elevated place.

In caſe the diſeaſe has already arrived to ſome height, and the child be no longer able to ſit upright or walk, there will ſeldom any cure ſucceed. Thoſe who get afflicted with a ſcab during the diſeaſe are more eaſily cured than others. Any one who already has a touch of this diſeaſe, and receives a ſevere hurt, falling, or fracturing a bone, will be in great danger by the diſeaſe increaſing and ſooner arriving at its height. The ſeventh and the fifteenth year are of the greateſt importance in the diſeaſe, for it is chiefly at that time that the rickets are cured or grow worſe.

The ſummer is the moſt beneficial ſeaſon, eſpecially if it be dry and warm: but the autumn and the winter are ſevere to ſuch patients. However, being then confined to bed, they are often enabled to walk again when the ſummer comes on; and this circumſtance they have in common with old people, and thoſe who are touched with apoplexy. No kind of hæmorrhage will prove beneficial to them: and at their hawking up and ſpitting of blood there is ſeldom any blood-veſſel burſt; the blood is let out by the *vaſa rorifera relaxata*, when it is driven thither by ſome diſorder.

Their bodies ſometimes ſwelling of a ſudden, ſignifies no alteration in the diſeaſe, for after a vomiting the ſwelling will often ſubſide again within a couple of days. But if it does not diſappear, but only changes place from one ſide to the other, for inſtance, from the right arm and foot to the left, if the eye on the ſame ſide with the ſwelling be running, a fever attend though it ſhould be but a ſlight one, the face be collapſed and grow wrinkled, a teneſmus and other ſpaſmodic diſtempers increaſe; then they approach nearer their deliverance, which only is effected by death, now ſoon coming on and making an end of them and their ſufferings. A greater change of their former conſtitution reſpecting the natural evacuations, as from coſtiveneſs to looſeneſs, from free diſcharge of the urine into ſtrangury, and *vice verſa*, likewiſe ſhews their miſerable life to be nearer its term. When the face begins to be collapſed a great deal, they will ſcarce be able to hold it out longer than a fortnight more. But when the ſight grows dim, and the feet loſe their feeling, then three or four days more is nearly the utmoſt they have to live. The ſame is the caſe when the breath begins to ſtink much.

I have indeed found this diſeaſe among the children of the common people in *Sweden*, but it would be worth a ſtricter inquiry if it does not chiefly appear near the poſt roads, and the larger country ſeats, where the venereal diſeaſe is more commonly ſpread.

A whole year is ſometimes required for the cure; which is not ſurpriſing at all, as the morbific matter is contracted by a long time, and as in this cure we

are

are to expect as much, if not more, from diet than from the remedies. We may very eaſily make a ſtrong body weak; but it is difficult, and requires a long time, to procure ſtrength to a weak and tender body. People who cannot afford to be at a great expence for their children muſt content themſelves with two remedies. The firſt corrects the acidity, and is prepared of pot-aſhes half an ounce, which is to be diſſolved in a pint of good ſpring water, and kept in a glaſs phial. Of this we give the child in the mornings, according to its age, from eighteen or twenty to an hundred drops in a glaſs of water. It is not neceſſary to adminiſter it every day, but it may be taken for three mornings running, and then omitted as many days; and ſo alternately. The other is alſo an antacid remedy, but chiefly promotes the digeſtion, prepares good chyle and good blood, keeps the pores and orifices of the lacteal veſſels in the inteſtines open, prevents ſlime and reſolves obſtructions in the meſentery, and, by means of its gentle irritations, promotes the *motus periſtalticus* of the bowels and the natural ſtools. This is to be prepared of *ſapo Venet.* ten grains, boiled ox-gall one grain, and *radicis ari præparati* five grains, all mixed together and made into eight pills of two grains weight each, and gilded, or, what is more uſeful, beſtrewed with a little fine cinnamon-powder. Four of theſe pills are to be taken at dinner, and four during the ſupper. The intention is to have them as a ſubſtitute for the natural gall. One may fetch enough of them at a time from the ſhops to laſt three months, preſerving them in a well-corked glaſs phial in the cellar.

The *Engliſh* are accuſtomed to bathe their children in cold water, or to let cold water drop down on them from ſome height through a funnel. Both theſe methods are alſo uſed by the *Swedes*, but very ſeldom. A young lady bathed three ſummers, one after another, in ſuch baths, and recovered intirely from the rickets. Similar cures are alſo performed at the mineral waters in *Sweden*, eſpecially at *Loka*, by the cold water being directed to be poured over the patient through a funnel (called *douche* by the *French*) and,

applying the mud. Of this I myſelf ſaw a great cure effected, in the year 1760, on a rickety child which could neither walk nor ſtand, and was carried thither: but within a fortnight gained ſuch ſtrength that it could both jump and dance *. The great cures that are performed at *Loka* are perhaps chiefly owing to the coldneſs of the mud applied. Nothing braces up and reſtores ſtrength to weak muſcles ſo much as cold water, uſed either as a bath, or by means of the *douche* or funnel. Thoſe who cannot bear either, may chafe their bodies, when they go to bed, all over with a ſponge dipped in cold water.

Poorer children cannot afford to be very nice in their diet. Nevertheleſs their parents ought to keep the room clean, and of a moderate warmth, often ſmoaking it with the roſin of juniper, and keep the child within doors when the weather is moiſt. Its cloaths ought to be kept thoroughly dry, it ought not to eat any ſour food or drink, and its body ſhould be chafed all over, ſeveral times in a day, with a piece of flannel, ſmoaked at each time with roſin of juniper.

A *French* phyſician gives great encomiums to the madder, or the root of *rubia tinctorum*, as a good remedy againſt the rickets. This is very cheap; and one may take half an ounce of it at a time, adding to it ten grains of orange-peel, and fifteen grains of bruiſed fennel-ſeeds; all which being cut ſmall, boil it in a glazed pot with ſix pints of freſh water till four only remain. When cold, and ſettled at the bottom, decant it, and reſerve the clear part in glaſs phials, to be uſed as daily drink. As the Doctor † claims much experience on this head, I need not mention the obſervations Profeſſor *Böhmer* has made concerning this root: ſee the *Encyclopedie*, Tom. VII. p. 479. It is probable that the root of *herba Britannica* would

* A fine oration, by Profeſſor *Bergius*, on the cold baths and mud at *Loka*, was publiſhed at *Stockholm*, 1764, in 8vo.

† *L. I. B. Coſniers Quæſtio Medica, An rachitidi rubia tinctorum?* See *Nouvelle Econom.* T. XXXI. p. 104.

be

be very proper in this diſeaſe, if it was prepared and uſed as was above preſcribed of the madder (*rubia tinctorum*).

The rich, as being able to afford a greater expence and attendance, may attain their end ſooner: 1. In correcting the acidity by half an ounce of *ſal tartari*, which is to be diſſolved in a pint of freſh and cold water, and kept in a glaſs phial. Of this one gives to the child, according to its age, from twenty to an hundred drops in a glaſs of cold water on mornings and afternoons. They may be taken likewiſe three or four days running, leaving off and beginning again, alternately, as many days, till we obſerve no more ſigns of flaccidity, no ſour breath, and no more ſweat that ſmells ſour. 2. If theſe drops give no ſtools, which however often happens by means of the alcali being combined with the acidity, we may give the child, now and then, ſomething of the rhubarb tincture known in the ſhops under the name of *anima rhei*, letting it take one, two, or three ſpoonfuls at a time, according to its age. 3. At the end of each dinner and ſupper it muſt take five or ſix pills, of two grains weight each, compoſed of a firmer *offa Helmontiana* nine grains, dry ox-gall one grain, and *radix ari* * as much as is required to make it into pills, which are to be gilded, and preſerved in a glaſs phial. We may fetch enough of them at once from the ſhops to ſerve for a month or two. Theſe are, on account of the above-mentioned *offa*, the neareſt in reſemblance to human gall; for it conſiſts of a fine oil and an *alkali volatile*. 4. When we find that the drops, No. 1. are not ſo often required, then we may begin to give the child from twenty or thirty to forty grains of the jeſuit's bark in a day, chiefly in powder, making more or leſs of the bark into a paſte with a little water, according as it will be more convenient to ſwallow, and wrapped up in a wafer. I have myſelf often accuſtomed children to take the bark, or any thing elſe, in wafers,

* This ought not to be pounded before it is to be uſed, for the old powder of it has no virtue.

by firſt putting ſugar in the wafers for ſeveral days, ſweetening it on the outſide, and giving it them to ſwallow. *Sal eſſentiale chinchinæ* is alſo very good. I once preſcribed of it for nine months together, ten grains each day, made into pills for a child who had the rickets, beſides which it was chafed morning and night with a piece of flannel ſmoaked with maſtick, and likewiſe almoſt every day drawn about the room in a little waggon. It recovered hereby its ſtrength ſo far as to walk, and has now not the leaſt ſign of its former diſeaſe.

If we ſhould not like the bark, we may preſcribe a frequent uſe of *Spa* water out of the *Pouhonner* ſpring, and for want of that we may uſe an artificial *Spa* water according to profeſſor *Monro*'s preſcription in the third Vol. of *Eſſais et Obſ. de Medecine de la Sócieté d'Edinburg*, p. 66, or one may preſcribe the *globulus martis* (*Boule de Mars*) which is to be ſown in a piece of muſlin, and by a thread ſuſpended every morning in half a pint of cold ſpring water, till it becomes the colour of bohea tea; this the child is to drink every morning, the *globulus martis* being hung in the window till the day following. 5. If the child beſides uſes cold water externally in any of the methods above-mentioned, together with a good diet, then there is nothing neglected of the moſt powerful remedies known againſt this diſeaſe.

As to the diet, the following is to be obſerved: 1ſt, if poſſibly there be an opportunity, the child muſt be transferred from a marſhy and low to a more elevated place, and which is not ſituated cloſe to ſome water. If it can be avoided, we muſt inhabit none of the lower apartments but the upper ſtory of the houſe, and keep the child within doors when it is rainy weather, and then ſmoak the room with maſtick, roſin of juniper, and the like. We ought likewiſe to take care that the chamber be kept clean and moderately warm, and alſo keep a little fire in it during the ſummer, in order to dry and purify the air from vapours that ariſe from thoſe who live in it. The chamber being waſhed and cleanſed, the child muſt live in another till the former be well dried again. 2d, The child ought every day frequently

frequently to be drawn in a little waggon, ſometimes in the room itſelf, ſometimes in the open air, according to circumſtances. It may for convenience ſake be left to ſit in this waggon during the day time. Its whole body ought ſeveral times in a day to be freely chafed with a piece of flannel previouſly fumigated with maſtick. 3d. In caſe the child be very ſleepy, one muſt prevent it from ſleeping too much; for this purpoſe the room ought to be light, and near a frequented noiſy place. The child ſhould not reſt on a feather bed but on a mattraſs of hair or ſtraw. 4th, Its cloathes, eſpecially linen and ſtockings, ought frequently to be changed and kept well dry; the colour of its cloathes ought either to be white or red, provided it can bear that colour. It is remarkable, one of the girls Dr. *Buchner* mentions, got convulſions as often as ſhe ſaw any thing of a red colour. 5th, The child ought as much as poſſible to live on dry food, and not to eat as much as it chuſes. We muſt not give it tea, warm water, or watry ſoups, nor meal-pap, nor any thing ſimilar with meal, nor warm and ſoft bread; all fat food will be hurtful to it, alſo all that is ſour or eaſily liable to acidity. For this reaſon it muſt neither get fat meat, fat ſoups, cheeſe, butter, oil, nor fruit, nor any thing ſweet, milk or whey. Boiled fiſh and boiled meat are likewiſe unwholeſome to ſuch children. 6th, Their drink is to be water tempered with a little wine which is not ſour, or they may drink a little ſmall beer which is ſtrongly hopped. For their bread we chuſe good and tender biſcuits; for the reſt they may eat ſtrong broths from which the fat has been ſkimmed off, fryed eggs, eggs and ale, ale and bread, eggs that are not boiled hard, roaſted birds, lamb, veal, and beef, fryed fiſh of ſuch ſorts as have ſcales, hachees, jellies of calves feet, fryed liver of fiſh, veal, hens, pigeons, ducks, geeſe, and other fattened birds, by the *French* cooks called *foies gras*. One may always allow their diſhes to be ſeaſoned with ſome ſpices, as cinnamon, nutmeg and mace.

CHAP.

CHAP. XXIV.

ON THE HYDROCEPHALUS:

Or, Collection of Water in the inside or outside of the Cranium *in* Children.

CHILDREN are in a very deplorable situation when their heads are larger than usually in proportion to the other parts of their body, and keep quickly increasing in size, whilst the other parts are almost stopt in their growth and pine away. Happily this disease is rare in *Sweden*, nevertheless it sometimes appears, and some of the children enumerated in the bills of mortality as dead of unknown diseases, are carried off by the beginning of a *hydrocephalus*, as it lately happened in a high family.

A child born with this disease is likely to have contracted it by some external violence mostly affecting its head, which easily might happen when the mother during her pregnancy receives a hurt on the abdomen, or when by means of her stays or narrow dress, or by sitting for a long time in the same position, or by a tedious costiveness, the head of the fœtus has happened to be pinched and pressed for some time; or it may arise from more hidden causes, especially secret distempers of the parents. Though the special cause cannot possibly be settled to any certainty, I however mention these as general causes to which the unusual shapes of children are owing, and which mothers ought for that reason carefully to avoid. Sudden fright occasioned by something disagreeable, which happens unexpectedly to be seen or heard of by the mother, seems hardly to be capable of effecting such a deformity as this, though it otherwise in fact becomes hurtful to the fœtus. The delivery will be very difficult and laborious, if this deformity of the head has already arrived to some height within the womb of its mother, of which a remarkable instance is given by Doctor *Jacob Hideen* in his Narrative to *Colleg. Medicum* for the

the year 1765, p. 302. The diſeaſe is however in this circumſtance leſs dreadful, as it ſoon brings on death.

But we find, by the greateſt number of known inſtances, that this unhappy deformity is generally not diſcovered till a few weeks or months after the child's birth. We have alſo good reaſons to believe that even in this caſe the diſorder has already begun during the pregnancy. Perhaps likewiſe at the delivery itſelf, the head of the fœtus having been ſqueezed for ſome time in a more narrow paſſage, which though one child may ſuſtain without any bad conſequence, another may not, on account of a different poſition and the mechaniſm of its body. Other circumſtances coming to this have likewiſe been looked upon as a cauſe of this diſorder, and that with the greater probability, in proportion as they have been dangerous, and the diſtemper broken out later; a rheumatiſm of the head and ſcab have for this reaſon been ſuſpected, though they often are obvious without being attended with this conſequence. The *hydrocephalus* in children of a more advanced age, has now and then ſeemed to follow from a blow or a hurt by a fall, or on another occaſion to come after a ſevere fever. The period of life has likewiſe been very ſhort in theſe caſes; nevertheleſs there have been ſome ſuch big headed children who, to our great ſurprize, have lived in this piteous condition from three to four, nay to ten and fifteen years: one is ſaid to have arrived to its twentieth year of age; and a few years ago, in a a pariſh near *Upſal*, died a woman forty-five years of age, who ever ſince the ſixth month of her nativity, had been confined to bed with a monſtrous large head, in ſuch miſery as it is commonly attended with. This caſe is deſcribed in the Diſſertation of Doctor *Ekmark, de hydrocephalo interno annorum* XLV.

The cranium itſelf is generally dilated when the head increaſes to ſuch a monſtrous ſize, for the bones are eaſily felt under the ſkin, which then on preſſing on it, does not give way. The whole cranium is almoſt always equally dilated, but however more ſo forwards and upwards, that is to ſay where no external reſiſtance is; therefore the forehead is both broad and high, and being both prominent over the eyes and the other parts

of the face, thoſe hereby appear to be ſo much more narrow and ſhort. The *oſſa cranii* are diſtended one from another before they have time to faſten together by by their ſutures, ſo that the interſpace betwixt them grows gradually, and may be felt in the manner as the fontanelle of young children. But if the child in this deplorable diſeaſe continues for ſome years, the bones of the cranium will then grow out, and at laſt meet one another, or the interſtice be filled up by ſmaller bones gradually growing and joining the former together, ſo that the diviſion no longer ſubſiſts, and after that the increaſe is leſs rapid. Hence we find it is only in younger ſubjects that the ſigns can be taken from the diſtance of the *oſſa cranii*; nevertheleſs it deſerves all attention, as the diſorder then begins, and one may have the more time, and hope to cure it. The cranium increaſes generally at the ſame time in thickneſs and firmneſs, though one inſtance is written down of its being tranſparent, ſo that one was able to ſee the interior ſtate of the head on holding it againſt the day or candle light.

As ſoon as this evil begins, the child cannot bear to be kept upright, but grows immediately uneaſy in that ſituation, gets a coughing, vomitings and oppreſſions, which all ceaſe again as ſoon as it is laid down. Though one before may have been able to keep it awake for a long time, it will now be continually ſleepy; ſuch indiſpoſitions deſerve the niceſt attention even in regard to a little older children; and when the child is ſtill young, one ought carefully to feel and obſerve the ſtate of the fontanelle, if it be increaſing in length and breadth. The growth of the body goes on very ſlowly during this diſeaſe, the limbs will be but ſmall, ſlender and lean; and within a ſhort time the child will no longer be able to ſupport its heavy head, much leſs to erect its whole body, nay though that ſhould not grow quite paralytic, it will however be out of its power to move; and the child being therefore continually confined to bed, grows more deformed. Thoſe who have continued in this deplorable ſituation, have ſeldom learnt to ſpeak diſtinctly, and ſeldom ſhewn a good underſtanding, have often had ſome fault in the external ſenſes, been liable to pukings, and ſome have been

been affected with frequent convulſions. In ſhort, their life has been wretched and miſerable in ſome ſhape or other; and it is but a poor conſolation, what is told of a few patients, that ſome of theſe ſymptoms have been quite abſent or leſs intolerable; for the ſingle circumſtance of not being able to move one's head is alone ſufficient to make life miſerable.

By opening thoſe after death, who ſooner or later have been carried off by this diſeaſe, we have ſufficiently learned that the *cranium* in this manner is diſtended by water, which has been collected thither from its moſt tender years, continuing to increaſe till the bones acquired more firmneſs, and thereby prevented its more rapid progreſs. It is therefore with great propriety that one has called this evil *hydrocephalus internus*, or internal dropſy of the head. This collection of water lodges commonly in the cavities or the ventricles of the brain. Authors have ſet it down as a great peculiarity, that the water has been collected within the brain in particular capſules. Once or twice it has been found above or upon the brain, between that and the finer *tunica* next to it, likewiſe between the ſaid *tunica* and the firmer exterior one, which alſo is ſaid to have been ſeparated from the interior vault of the cranium, and conſequently to have given room to water: but in theſe very rare caſes, the water has beſides been found in the ventricles of the brain, where it probably firſt has been collected, and from thence found an iſſue. The water has more often been clear, now and then mixed with blood or purulent matter at the bottom; or it has been ſtinking. The quantity of water has been from three pints to a gallon, nay an inſtance is related of a tender child, having above three gallons; the quantity of water has in general been greater in tender children than in older patients. The leaſt of theſe watry collections is alone ſufficient to preſs the whole brain, and its nerves; the upper part of the brain, which otherwiſe has the thickneſs of two or three fingers, has therefore in this caſe been found thin as the back of a common table knife, nay as a cartridge paper, without the leaſt ſign of the *anfractus gyriformes*, or thoſe turnings and windings reſembling

reſembling that of the inteſtines, which a ſound brain otherwiſe is endowed with. When the water has lain upon the brain, then it has been compreſſed to a very ſmall compaſs, and beſides been hardened. Sometimes it has been very much ſoftened to a confuſe maſs, or conſumed to the beginning of the *medulla ſpinalis*.

This collection of water does not begin ſometimes till the child is two or three years old; the increaſe is then more ſlow, and the afflux ceaſes after a time. In ſuch a caſe the head is enlarged ſomething more than uſually, and a part of the above enumerated bad ſymptoms begin without immediately ſuſpecting it for the *hydrocephalus*. This is likewiſe the caſe with a great number of children who get the rickets; they are frequently ſtupid, pale, of a puffed up countenance in the face, and leucophlegmatic, in many circumſtances reſembling thoſe before deſcribed big-headed children; they likewiſe get ſometimes affected with a plain *hydrocephalus*, (ſee p. 269 in the preceding chapter). The morbific diſpoſition which in the rickets is univerſal, and cauſes likewiſe the oſſeous ſubſtance to ſwell, contributes likewiſe in that caſe to the increaſing of the head.

Such an unhappy collection of humours in the brain often enough happens to full-grown perſons, but without any dilatation of the cranium, which then has ſufficient firmneſs to reſiſt; therefore the water in thoſe is never found in ſuch quantity; nevertheleſs, as the force of the water preſſes the whole brain and its nerves, the conſequences will be equally dangerous, ſuch as a very great ſleepineſs *(carus)* crazineſs, palſy, apoplexy, and a ſudden death *.

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* Doctor *J. G. Zimmerman* mentions that one of his countrymen, who was a prodigy in nature, in reſpect to his learning, grew at laſt as ſtupid as a beaſt, only by about a pint of water being collected in his brain and its membranes. Dr. *Ith*, who immediately found in what the diſeaſe conſiſted, reſtored the patient to his underſtanding twice, only by ſuch remedies which evacuated the water. But at laſt the diſeaſe would no longer yield to remedies. See *Von der Erfahrung* ii. p. 545.

Children

Children are ſometimes, though happily very ſeldom, found to be born with two other deformities beſides that of the watery collection within the brains. The firſt conſiſts in a ſoft tumor, ſometimes reſembling an excreſcence which has had its ſeat in either the ſide or the back of the head; its magnitude being various, from that of an egg to the ſize of a head, nay ſometimes bigger. Such a tumor has ſometimes contained within its ſurface, larger or ſmaller pieces of the brain, in the cavity of which there has been water communicating with either of the ventricles of the brain through a ſmaller or larger aperture of the tender bone of the cranium, where the tumor has been annexed. Far from doing any good by inciſion, it has accelerated the death of the patient. From all this it is plainly to be perceived, that the water already collected within the ventricles of the brain, has preſſed out a part of that *viſcus* through ſome leſs firm place of the cartilaginous membranes, betwixt which the bones of the cranium are gradually formed. This fault, though it moſtly has ſoon terminated with the loſs of life, nevertheleſs being of a ſmaller ſize, has now and then been ſucceſsfully cured by the endeavours of the celebrated *French* ſurgeon *Mr. le Dran*; this has given ſome reaſon to hope of curing an uniformly diſtended *hydrocephalus internus* when ſtill in its beginning.

The other deformity does not differ from that abovementioned in reſpect to its particular kind, but to the place it occupies. On ſome part * of the *ſpina dorſi*, chiefly in the loins, ſometimes nearer the fundament, but ſeldom on other parts of the back, there ariſes a ſwelling, which, by giving way to preſſure, diſcovers itſelf to contain a tumor: the parts below this tumidity are lame, and the legs generally beſides a little twiſted or ill-ſhaped. This tumidity, when accompanying the *hydrocephalus*, on being opened, has leſſened the bulk of the head, which increaſed again on ſhutting up the aperture. Inciſions here likewiſe have

* Examples of this may be read in the Tranſactions of the *Swediſh* Academy of Sciences, ſent in by Profeſſor *Acrell* for the year 1748.

accelerated

accelerated death. This connexion may eaſily be accounted for by anatomy: for inſtance, the water may have been collected firſt in any one of the ventricles of the brain; then, going by the uſual open ways down into the dorſal canal around the *medulla ſpinalis*, it has preſſed out the thick membrane, and thereby formed this tumor; the *vertebræ* in the neighbourhood have then, more or leſs in number, been found cloven at their hindmoſt or ſpinal production, which is cartilaginous in infants; or they have been quite defectuous. This fault has been occaſioned either by the preſſure of the water alone, or, it being originally in the formation of the bones, the water would the more eaſily prevent its coming to a perfection. Therefore this deformity is called *ſpina bifida*, and apparently would, when nearer the fundament, be as curable as the *hydrocephalus*; but not ſo higher up, where, on account of the vertebral productions, a ſimple preſſure will not put matters to rights. There is likewiſe a poſſibility of the water ſometimes beginning lower down, and then riſing higher up.

We have ſpoken before of the *hydrocephalus internus*, which has its origin and ſeat within the *cranium*; but there is alſo an external *hydrocephalus* or *hydrops* of the head, which ariſes from an aqueous humor being collected between the *cranium* and its exterior integuments. Theſe give various room to the water, according to their ſituation one within the other. The face alſo will ſwell in that *hydrops* of full-grown perſons which, next under the ſkin, is ſpread over the whole body. A ſimilar aqueous tumor will likewiſe attend the *eryſipelas* of the head, ſmall-pox, nay often the tooth-ach, and rheumatiſms of the head. But we ſhall find, at leaſt in moſt of theſe caſes, that the hairy part of the head does not ſwell very much; and when it happens to be diſtended with water it is properly called an external *hydrops* of the head, whether it be confined between the *calotte aponeurotique* and the *pericranium*, or between this laſt and the *cranium* itſelf, in which caſe the ſwelling muſt neceſſarily be lower, or leſs elevated, and leſs yielding to a preſſure. Several old and very experienced phyſicians have never met with

this kind; from which we may conclude with certainty that it muſt be very rare. It is found now and then to be complicated with the internal dropſy of the head, and then plainly to have been a conſequence of the ſame. But the few examples which are enumerated of the ſimple external dropſy of the head ſufficiently ſhew, that an advanced age is equally ſubject to it as the moſt tender.

Dropſy ariſes in the head in the ſame manner as in other parts of the body: the ventricles of the brain, as well as all other cavities of the ſolid parts, either larger or ſmaller, are kept ſmooth by a ſubtle aqueous vapour which continually perſpires from the blood-veſſels. It is eaſy to diſcover, that, though this vapour be ever ſo ſubtle, and imperceptible within a ſhort time, nevertheleſs it would, not being carried off for the ſpace of ſome days or months, be collected in a quantity, ſo as at laſt to diſorder and flow over the place: but an all-wiſe Providence has prevented the diſorder which would ariſe from thence, by making a number of lymphatic veſſels which gradually abſorb this vapour after it has performed its function relative to the place, and then the ſaid veſſels carry it into the blood again; the ſuperfluous and corrupted parts of it being depoſited and carried off by certain means provided for that purpoſe. Now the due proportion being diſturbed, ſo that the aforeſaid vapour be more copiouſly affluent than its conveyance off, it will collect together in a perceptible water; and this is generally the caſe with the dropſy, in what place ſoever it has its ſeat; therefore the neareſt cauſe (*cauſa proxima*) may be a fault either in the tubes that carry the vapour to and from the place, or it may conſiſt in the quality of the vapour itſelf: the worſt is if the whole together be faulty, which commonly will be the caſe when the dropſy has laſted for ſome time.

The vapours may be too copious when the internal veſſels of exhalation are relaxed and dilated ſo that they perſpire more than a due quantity, eſpecially if the blood be at the ſame time too thin, which ſeveral important cauſes may effect; as, for inſtance, an interrupted perſpiration of the ſkin; a great abſorption

in a moiſt air; too much drink and humid food; but chiefly both circumſtances taken together; and in a fœtus it will happen no otherwiſe than by the blood-veſſels being ſqueezed, whereby the circulation muſt become ſlower, nay nearly ſtagnate, ſo that the pores of the blood-veſſels will not only be diſtended, but the blood within the body muſt be affected in the ſame manner as is daily obſerved in a portion of blood, kept undiſturbed on a plate, after venæſection; that is to ſay, it will reſolve itſelf into a *ſerum*. The vapour itſelf may beſides grow too viſcid, and thicker than to be capable of abſorption by the very minute and ſubtile orifices of the abſorbing veſſels; or theſe laſt may loſe their power of abſorbing; a greater number of them may be ſqueezed together; perhaps the abſorbing veſſels themſelves may burſt in ſome place: however we have ſeldom reaſon to ſuſpect this laſt cauſe; but the before enumerated faults of the ſaid veſſels happen by far more frequently, and will likewiſe remain as long as the diſtended parts continue in their weakneſs: for when the ſkin and conſequently the interior parts do not correſpond one to another tolerably in due proportion, the orifices will neither be kept rightly open, nor cloſe enough to the vapour which they are to abſorb; and beſides there will be an interſtice left for the vapour to collect together. Theſe circumſtances therefore ſhould not paſs unnoticed in any kind of dropſy.

For, in order to the cure of the dropſy, it is in general required, partly to carry off the collection of aqueous humor as ſoon as poſſible, partly to prevent whatever might cauſe another collection. The firſt of theſe we chiefly effect by remedies which increaſe either the ſtools or the urine, the ſuperfluous humor being carried off by the above-mentioned evacuation. Nevertheleſs this is the longeſt way. On ſome occaſions it is performed by veſicatories, proper inciſions, and other apertures, which immediately give iſſue to ſuch a humor. But theſe operations require various attendance and nicety; and, above all, we muſt then ſtrengthen, and by proper bandage ſupport, the parts which were ſo unnaturally diſtended. According to this

this general method we may likewiſe endeavour to cure children who are affected with a dropſy in the head. They muſt frequently take the electuary of manna, with rhubarb or jalap in it; or the *electuarium lenitivum*, diluted with *ſyrupus roſarum ſolutivus* to the conſiſtence of a thick juice. If the child be ſomething older, we may add to the former a few grains of *radix ſcillæ*, which, preferably to many other remedies, quickly carries off aqueous humors, either by urine or ſtool, or ſometimes both ways. However we ought to prevent reachings, which the above-mentioned root of *ſcilla* will eaſily excite: for, though a vomiting be ſalutary to children in moſt caſes, as well as in this, when gentle, it would however at this time eſpecially do much harm by its many and violent ſhakings, which certainly could not help increaſing the preſſure of the before too much diſtended and affected parts.

If the water, as it has happened in ſome rare caſes, lodges in the outſide of the *cranium*, it is moſt eaſily and with greater ſafety evacuated by a few longitudinal inciſions down to the back of the head, which muſt be kept open by lint and digeſtives as long as neceſſary, the head being, during the time, frequently fomented with lime-water, in which there is mixed ſome wine or brandy, eſpecially ſpirit of camphire. Bliſtering with *cantharides* will ſometimes do the ſame ſervice.

But if the water lodges within the *cranium*, then we muſt not make any inciſions on the ſwelling; for that would haſten death. As to veſicatories, they are nevertheleſs recommended in this caſe, particularly by Baron *Van Swieten*, who has found them to have a very ſalutary effect in diſorders which appeared to him as reſembling the internal *hydrocephalus*. With nine parts of the *emplaſt. e melilcto* there was mixed one part of *emplaſt. veſicatorium cantharidum:* with this he covered the child's head, after having only ſnipped off the hair with a pair of ſciſſars. The plaſter was taken off two or three times in a day, in order to chafe the head; which after that came into a moſt profuſe ſweating; and ſome repelled eruptions, by which the eyes, breaſt, and the whole nervous ſyſtem had already ſuffered, quickly came out again.

But during this time we muſt endeavour to effect, above all, that the head may ſubſide or be contracted in the ſame proportion as the water decreaſes. It is plain, however, that we ſhall meet with greater difficulty in performing this than in contracting any of the ſofter parts in a ſimilar caſe; for theſe do not ſo ſoon loſe their own *tonus* or elaſticity; but the *cranium*, being hardened more and more whilſt it is dilated, cannot contract itſelf to a leſſer bulk than what the interſtice left between its bones will allow. Therefore all endeavours muſt be vain, if the head be ſo much dilated that, though the bones are preſſed cloſe together, yet there be ſtill a longer interſtice or room left under the *cranium*, between that and the brain, than what is required for this laſt; for though the water occupying this place ſhould not increaſe more, it will however preſs and injure the brain. Nor can one, ſince the diſeaſe is arrived to ſo great a height, have any further hopes that internal remedies would ſufficiently carry off the water, and cauſe the brain to grow in proportion at the ſame time, and get the better of the remainder by its own ſtrength: it is therefore only in the beginning of the diſeaſe that this laſt-mentioned and moſt principal cure will take place. However we have reaſon to expect its ſucceeding then, by the inſtances mentioned of the before-deſcribed partial aqueous collections on the outſide of the head being happily cured when ſmaller, and repreſſed in a rational manner. This has been done by a thick compreſs dipped in brandy, or in a mixture of lime-water with brandy or the like, which has been applied on the tumor, and kept there only by the uſual cap of the child cloſing neatly about the head, ſo that the preſſure is moderate.

What Mr. *Vogel* has found to happen in this caſe is remarkable, that is to ſay, that children have fallen into a very profound ſleep which has laſted for twenty-four hours together. This circumſtance however did not deter him from continuing what he had begun; but, by tickling the children every third hour, cauſing them to ſuck during the ſleep itſelf, beſides keeping their bodies open by glyſters, they were perfectly cured.

The

The ſame method ſeems to be very practicable, not only in curing aqueous tumors on the back which children are born with, when theſe ſwellings are of a ſmaller ſize, and ſituated lower, and nearer to the fundament, but likewiſe when the whole head is dilated by its internal dropſy. Nevertheleſs I cannot too often repeat how vaſtly important it is to undertake the cure when the evil is ſtill in its firſt ſtage of exiſtence: and that all, and chiefly the following, ſigns of the diſorder ſhould very carefully be taken notice of; for inſtance: The child's uneaſineſs in a ſtraight and erect attitude: it's ſleepineſs; and that the bones of the *cranium* ſeparate more and more. Perhaps, if we paid a greater attention to this, we ſhould find that this diſeaſe occurs more frequently than we are apt to conclude from thoſe rare inſtances when it has proved mortal till it has arrived to a high and deplorable degree.

CHAP. XXV.

On a difficult Diſeaſe *of the* THROAT, *with a preternatural Membrane in the* Windpipe.

THIS diſeaſe is in general ſo little known, that I have not been able to learn any vulgar name for it from any country, except that the *Scotch* call it *croup* (*morbus ſtrangulatorius*, *ſuffocatio ſtridula*). It is alſo rare to find authors mentioning any thing of this diſeaſe. The reaſon muſt be, that parents neglect to conſult phyſicians immediately, becauſe it ſeems to be only a ſlight illneſs at firſt; and the children themſelves not knowing how to expreſs what they ſuffer, it comes to its height, proves incurable, and unexpectedly mortal. Or the parents have not underſtood how to take notice of and to deſcribe the beginning and increaſe of it; ſo that the phyſician cannot learn (*decurſus morbi*) the run of the diſeaſe:

and beſides, it frequently happens that he is not ſuffered to open the corpſe.

Some parents however have been ſo ſenſible as to allow ſuch an opening, whereby the diſorder is at laſt more known. Aſſeſſor *Strandberg* was the firſt who acquainted me with the nature of it, which he had learnt by opening the patients after their death. Several other *Swediſh* phyſicians after that found it out, and their obſervations were collected by Dr. *Wilke* in a Diſſertation defended at *Upſal*, 1764, under the inſpection of Profeſſor *Aurivillius*.

This kind of ſore throat has not only been ſpread at *Stockholm*, but likewiſe about *Upſal*, eſpecially in the *Raſbo* pariſh, where, during the years 1761 and 1762, in many houſes it carried off all the children. Some of them died on the ſecond day, but the greateſt number on the fourth and fifth days. They vomited up a quantity of ſlime and pieces of a membrane. Neighbouring children alſo, who viſited the patients, got infected with the diſeaſe ſoon after.

It likewiſe carried off a great number of children in the pariſh of *Fundbo*; and Dr. *Blom* mentions that it has been ravaging in *Hedmora* and *Saether*. It has alſo been ſpread in *Scotland*; which I find in a pamphlet publiſhed by Dr. *Francis Home* at *Edinburgh* in the year 1765, called, *An Inquiry into the Nature Cauſe, and Cure, of the Croup*. In which is related what the Doctor himſelf has experienced of it, and what others have communicated on the ſubject. It is by this pamphlet, and the before-mentioned Diſſertation, I am chiefly enabled to give the following account.

The diſeaſe conſiſts in a ſoft, thick, and whitiſh membrane, which is formed, during a fever, in the wind-pipe, immediately below its beginning (*larynx*), and ſometimes deſcends into its ramifications (*bronchiæ*). It is not adherent to the inſide of the wind-pipe, but is quite looſe, ſo that after death we may eaſily extract it in form of a hollow tube. Betwixt this and the inner natural coating of the wind-pipe there is formed a matter ſomewhat reſembling *pus*, and which is likewiſe to be met with in the *bronchia* and

and the lungs. It will ſink in water. No fibres are to be ſeen in this new præternatural membrane, nor does it diſſolve on being put into a mixture of tepid water with milk. Notwithſtanding this, there is not the leaſt hurt to be found in the lungs, nor the leaſt mark of any ulceration in the internal membrane of the windpipe.

When children are affected with this diſeaſe, they loſe their uſual chearfulneſs, are ſomething hot, and ſome of them cough: they complain of a ſlight obtuſe pain in the wind-pipe ſomewhat below its orifice; and oppoſite the ſame place, on the outſide of the throat, there is a little ſwelling to be obſerved in ſome patients, which akes a little on preſſing it with the finger: the face begins to look red, and is puffed up: nothing extraordinary is to be ſeen on inſpecting the *fauces*, and there is ſeldom any difficulty of ſwallowing, but the breath is laborious: a fever comes on, with a hard and very quick pulſe; the thirſt becomes preſſing; the patient coughs ſometimes. All this increaſes haſtily, and on a ſudden the pulſe lowers, and grows very rapid, but weak; the breathing becomes more difficult, frequent, and ſhorter; the pain diſappears, the coughing ceaſes, and death comes on unexpectedly. Some patients are obliged to keep in bed; others again are better at times, and able to walk about. A child, who was walking and playing in a room, died as its mother was going to take it up in her lap. It is peculiar in this diſeaſe that children enjoy their underſtanding till the laſt moment, and that their voice is particularly hoarſe and ſharp, ſomewhat reſembling that of a young cock: indeed it is impoſſible to give an exact deſcription of that voice; but a perſon who has once heard it will always know it again. This ſound, which is a certain and infallible ſign of the diſeaſe, is only to be obſerved in ſome of the patients, when they cry, cough, or call out.

It is eaſy therefore to diſtinguiſh this from the other diſeaſes of children which are accompanied with a cough, hoarſeneſs, or catarrh. It ſeems likewiſe to be different from another ſore throat which once was almoſt forgotten, but now not long ago carried off

a great many children in *England*, *France*, and even in *Sweden*, and was called a malignant ſore throat, *Mal de gorge gangreneux*, (*ſynanche pharyngea epidemica*) becauſe there was a ſwelling plainly to be obſerved in the *fauces*, which turned white, ulcerated, and terminated in a gangrene, unleſs ſpeedy relief was procured. See the Eſſays of knowing and curing the Epidemical Diſeaſes of *Sweden*, by Profeſſor *Bergius*, for the year 1755, p. 36,—38.

The diſorder we have undertaken to treat of in this chapter, and which conſiſts of the before mentioned præternatural membrane in the wind-pipe, is never found to affect any perſon above twelve years of age.

Doctor *Home* is of opinion, that it chiefly affects children, who live near the ſea, and ſometimes thoſe who inhabit low and marſhy places. But it has made its appearance in ſeveral places of *Sweden*, which have no ſuch ſituation, and as I have before mentioned, it has been ſpread in *Hedmora* and *Sæther*, both far diſtant from the ſea.

Phyſic being a ſcience which has the life of mankind for its object, it will not bear any vain hypotheſis, but ought chiefly to be practiſed according to experience and facts; therefore the beſt way of acquiring a light into this matter will be to enumerate the cauſes from the before mentioned writings.

The firſt caſe. A child having died by this diſeaſe in the year 1755, the corps was opened by Profeſſor *Martin*, in the preſence of Aſſeſſor *Strandberg* and *Darelius*. A membrane almoſt quite looſe, was found in the wind-pipe, and extracted as if it had been a hollow tube. It was thick, and of a whitiſh grey in the inſide, but on the outſide at the top it had a reddiſh colour. The lower parts of it in the *bronchia*, were more and more pale, the lowermoſt part of all being quite white, and nearly reſembling the ſkin in the middle of an egg. It was plainly to be perceived, that it was a præternatural membrane by no means belonging to that of the wind-pipe or its ramifications. The lungs were not inflamed, nor any way diſordered.

The ſecond caſe. A girl fifteen months old, living a mile diſtant from the ſea, in the evening ſeemed ſomething

ſomething indiſpoſed, being a little more hot than uſual. Doctor *Home*, who went to ſee her in the morning, found her breath laborious, the pulſe hard, and beating one hundred and thirty-five times in a minute. He ordered five ounces of blood to be drawn off immediately; her voice then grew ſharp, and reſembled that of a cock; the breathing frequent and deep; her forehead and inſide of her hands very hot; both hands and feet ſwelled, but without any redneſs. The pulſe now being hard, ſhe was bled again, which gave her much eaſe; ſhe was made to drink and breathe the vapours of warm water mixed with a little vinegar: this had a good effect, and promoted the expectoration. The body was unbound with the *magneſia alba*; in the evening a bliſter was applied round her neck; the third day ſhe was ſomething better, but the voice the ſame as before, the pulſe hard, and the breath deep. In the evening four leeches were applied under the chin juſt where the wind-pipe begins, and they having left off ſucking, the place was fomented with warm water, ſo that blood continued to drip for four hours; the child was well the next morning.

Caſe the third. A girl eighteen months old, having till the preſent enjoyed good health, was affected with the ſame diſeaſe. She lived near a large lake, a mile diſtant from the ſea; leeches were immediately applied, which ſucked five ounces of blood, and ſhe took an emetic. After that Doctor *Home* ſaw her, and found her voice had not that peculiar ſounding, only when ſhe coughed or would ſtrain her voice. The breathing was ſhort, the pulſe weak but rapid, ſo as to beat one hundred and thirty times in a minute; ſhe had a dry and hollow cough, no difficulty of ſwallowing, but it was painful for her to move the neck: the urine put in a glaſs ſeemed clear, and depoſited no ſediment at the bottom. The Doctor made her breathe the vapours of warm water with vinegar in it, and a bliſter was wrapped round her neck: towards night ſhe ſeemed ſomething better, and the neck began to be a little ſofter; the night was good, and on the third day ſhe regained her natural voice, except when ſhe coughed; for then ſhe had the before mentioned ſound. The noſe began to run, and there were ſmall clouds (*nubeculæ*)

beculæ) to be ſeen in the urine. Another emetic was adminiſtered. On the fourth day the voice was not yet found as it ſhould be; the urine now depoſited a ſediment for three or four days, upon which ſhe was quite reſtored. It is remarkable, that this child had been affected with the ſame diſeaſe, but it was then very gentle.

Caſe the fourth. A child two years old, who half a year before had had the ſmall-pox, was on a ſudden affected with this diſeaſe, which immediately was attended with the mentioned ſtrange ſound; leeches were applied, as alſo a bliſter behind the ears and on the upper part of the throat. Dr. *Home* ſaw the child on the fourth day, its breathing being difficult, it had oppreſſions, the ſtrange ſounding voice, and a tumour on the throat; the pulſe beat one hundred and forty times in a minute; every circumſtance ſeemed threatening. The before mentioned vapours, fomentations, and ſeveral leeches were applied; the day following, the child ſeemed more eaſy, chearful, and its voice natural; on the ſixth day, the pulſe was better, the voice quite natural, and the tumour reſolved.

Caſe the fifth. The oft mentioned Doctor *Home* went to ſee a boy who was ſeven years of age, being now on the fourth day ſince he fell ſick, living on the bridge at *Leith*. The child had the preceding winter been affected with a violent cough, having had the meaſles ſix weeks before that. He had often taken purges, and was tolerably healthy, only coughing a little till he grew ſick, had a fever, with heat, thirſt, and the ſtrange ſounding of the voice which diſcovered the diſeaſe. On the fourth day he had a quick pulſe, ſomething hard, but without any great ſtrength. He could ſwallow without difficulty, but complained of a pain in the wind-pipe when he ſhould ſpeak, or when the Doctor preſſed on it with the finger. The face ſeemed to be puffed up, the thirſt was great, and the breathing laborious. He ſpit ſometimes, and a frothy ſaliva was often to be ſeen on the lips. There was a white and thick ſediment in the urine, the head and the ſenſes were in good order. A bleeding was immediately performed, leeches were applied the night following, and a bliſter round the neck. The next day

the pulſe was much weaker, and beating one hundred and ſeventy-five times in a minute, the breathing grew quicker, and the child died the following night, enjoying its ſound underſtanding to the very laſt.

The corpſe was opened, but there appeared no ſign of any inflammation in the fauces, but the windpipe being opened, the Doctor was amazed to find in its upper part a ſtrange white, ſoft and thick membrane, which for the moſt part was looſe, and covering a matter reſembling pus; the inferior parts of it looked red, nevertheleſs they were not properly ſpeaking inflamed. The *bronchia* being likewiſe inſpected, there was found ſomething ſimilar, but the membrane was thinner and purulent; there was likewiſe contained a quantity of pus, which was eaſily ſqueezed out, and the lungs ſeemed to be without the leaſt injury.

Caſe the ſixth. Two days after, the ſame Doctor was called to the ſiſter of the late mentioned boy; ſhe was five years old, and had the night before complained of an obtuſe pain in the throat; ſhe had already been bled, and taken a mixture of *ſpiritus mindereri* with *theriaca*, and a bliſter was applied round the neck. She had lain in a continual ſweating after having begun to take of the mentioned mixture. When Doctor *Home* came to ſee her, ſhe had then got the ſtrange ſounding voice, and ſo difficult a breathing, that the ſhoulders were much elevated; the face was ſwelled and red, the deglutition eaſy, the pulſe quick and ſtrong, her ſenſes perfectly ſound. The Doctor immediately ordered leeches to be applied to the throat, and it being after that fomented, he made her breathe in the vapour of warm water with vinegar, which ſeemed to afford ſome relief. In the evening ſhe grew worſe again, and could not bear to lie long in the ſame poſition: the Doctor preſcribed an emetic of the *ſyrupus ſcilliticus*; ſhe threw up a great quantity of viſcid ſlime, ſhe took after that purified nitre with camphire; the day following her pulſe was found to beat one hundred and fifty-two ſtrokes in a minute, and ſhe ſeemed to grow weaker; the tonſils were now a little ſwelled and covered with ſlime. She had a difficulty to ſwallow, and frequent endeavours to reach; ſhe aſked often

for

for ſomething to drink, but drank only a little at a time; the tongue was white and foul, the breathing very difficult; ſhe eat a few ſpoonfuls of *panada* with wine; a lenient clyſter was injected, and a fomentation of garlick was applied to the feet; all grew worſe in the afternoon; three ſtools were effected by the clyſter; the breathing grew more laborious and quicker, ſhe was very uneaſy, toſſing her body much, the pulſe grew weaker and intermitted ſometimes; ſhe died in the evening, her underſtanding remaining ſound to the laſt. What ſhe ſpit without coughing looked clear, but that which ſhe had coughed up was thick and yellow as pus.

The corpſe being opened by Mr. *Gibſon*, the tonſils at the root of the tongue were ſwelled and covered with ſlime, and their orifices (*ductus excretorii*) much dilated; the tonſils were likewiſe larger than uſual, but there was neither any ſign of inflammation to be obſerved on them or the circumjacent parts. Around the orifice of the wind-pipe (*glottis*) all was covered with a thick and glutinous ſlime; the wind-pipe being opened, there was no inflammation to be ſeen, but uppermoſt, chiefly on the ſide of the *œſophagus*, there was a membrane, the half of which ſeemed to be diſſolved; there was likewiſe a matter which reſembled pus; a few ſmall glands in the opening of the wind-pipe appeared likewiſe to be ſwelled; there was a ſimilar matter lower down in the wind-pipe, but no præternatural membranes: at the diviſion of the wind-pipe there was to be ſeen a large quantity of glutinous and white matter, coming out when one preſſed a little on the lungs, theſe being apparently full of it, though they otherwiſe were ſound; the ſtomach was very ſoft in the inſide, and lined with a quantity of ſlime.

Caſe the ſeventh. A child ſeven years old, and in perfect health till the preſent, had now for four days complained of a difficult breathing and of an obtuſe pain in the upper part of the wind-pipe, and had a ſqueaking voice; his quick pulſe and difficulty of breathing, had already induced a ſurgeon to take from him twelve ounces of blood, and to give the *gummi ammoniacum*, together with ſalt of hartſhorn. When

Doctor *Home* in the evening ſaw the child, he found the pulſe very quick and weak, and the breathing very frequent: the patient ſtill felt the pain above in the wind-pipe; no inflammation could be obſerved in the fauces; the urine depoſited a thick ſediment, ſuch as it does when an internal ſuppuration has no outlet; the voice was weak, and the ſqueaking ceaſed. As the Doctor found its death to be near at hand, he deſired the ſurgeon afterwards to open the corpſe, and to examine the wind-pipe minutely. This having been performed accordingly, the ſurgeon related, that no ſign of inflammation was obſerved in the lungs, but that he had found a quantity of matter reſembling pus immediately below the orifice of the wind-pipe, but he had not obſerved any ſtrange membrane, nor whether the *bronchia* were filled with pus.

Caſe the eighth. A boy four years of age, was affected with a coughing and frequent breathing, and as the diſeaſe ſeemed to reſemble the croup, leeches were immediately applied, and the next day a veſicatory; the patient ſeemed after that to be better, and was able to walk about in the room for that week, only coughing a little. Doctor *Home*, who ſaw him the next Sunday for the firſt time, found him hoarſer than uſually in this diſeaſe, the pulſe was very quick, the breathing ſhort, and that he found ſome difficulty in ſwallowing, together with a coughing that was dry. The Doctor ſuppoſed then the diſeaſe to be combined with the *ſquinzy*, and applied leeches, fomentations, and other things, as uſual in ſuch a caſe. On the Monday the breathing was better, and the other ſymptoms ſeemed to decreaſe; the Tueſday all grew worſe again, and the patient died.

The corpſe being opened, there was found ſuch a membrane as we often above have mentioned. It being now white, very firm and thick, and below it there was a purulent matter which was yellowiſh and not yet dry. The natural membranes of the wind-pipe were entire, though red and much inflamed. In ſome of the *veſiculæ pulmonales* there was to be ſeen a matter ſimilar to that above mentioned of the wind-pipe.

Caſe

Caſe the ninth. A girl four years of age began to cough a little on the 20th of *October* 1763; ſhe was nevertheleſs expoſed to the open air the next day. In the evening ſhe had a more violent coughing and a catarrh of the noſe. Mr. *Wood*, who as a phyſician attended the family, happened to ſee her by chance as ſhe was playing, and obſerving her to have ſome difficulty of breathing, he felt the pulſe and found it to be quick, therefore he bled her, though ſhe otherwiſe ſeemed very well; the 21ſt ſhe was worſe; a veſicatory was applied round the neck, and another between the ſhoulders: a clyſter was likewiſe injected: the 24th, Doctor *Home* ſaw her; the breathing was found ſhort, and the pulſe beating one hundred and eighty ſtrokes in a minute; the urine depoſited a thick ſediment; ſhe was ſaid to have ſpit up a matter which her relations looked upon as pus. The Doctor judged by her breathing, that more of this remained; ſhe eat and drank without any difficulty. Doctor *Home* gave her an emetic of *ſcilla*, but that was of no benefit; the 25th, matters were in the ſame ſituation. The Doctor obſerved a little pus in the ſpittle which ſhe coughed up; the breathing was now very ſhort and laborious; vapours from a little vinegar were ordered to be drawn in by the breath, in order to excite coughing, but that had no effect, and the girl died in the evening.

Her body being opened, the inſide of the wind-pipe was found to be lined with an unnatural membrane the ſpace of three inches below the beginning of it; the membrane was looſe, and taken out like a hollow tube. The natural membranes of the wind-pipe were not affected at all; the lungs were freſh; but in the left lobe of them there was a quantity of matter which was yellow and thick, and ſunk in water; the præternatural membrane was tough, and did not diſſolve though the Doctor purpoſely kept it for two days in a mixture of tepid water with milk; no fibres were to be ſeen in it.

Doctor *Home* himſelf has been preſent, and written the eight caſes of the before mentioned; but the four following were communicated to him by others, of which we here give only a ſhort abſtract.

Caſe

Caſe the tenth. Mr. *Wardrobe* ſpeaks of a child who died of this diſeaſe on the fourth day, and that the ſwelling it had on the outſide of the wind-pipe was rather *œdematous* than inflamed.

Caſe the eleventh. Mr. *Balfour* ſpeaks of a child under his care who was affected with a coughing for eight days together before the diſeaſe broke out; and that, after much blood being drawn off at the neck by leeches, he bled the patient beſides, and found the blood to have a *cruſta inflammatoria*. The body being opened, he thought there was a ſuppuration in the wind-pipe; but, on examining it more narrowly, he found it to be only a *mucus*, which had acquired the ſame colour as that of *pus*, and the ſame appearance and firmneſs as a membrane. He mentions likewiſe that this membrane was thicker in the middle, ſo that it ſeemed quite to ſhut up the wind-pipe, conſequently to choak the patient.

Caſe the twelfth. Mr. *Wood* mentions a child ſixteen months old dying on the ſeventh day by the croup. The corpſe being opened, he found, in the wind-pipe and *bronchia*, a great quantity of ſlime, which was frothy and ſomewhat viſcid; and that it was continued, together with the unnatural membrane, down into the ſmalleſt ramifications of the *bronchia*, reſembling *pus*. He mentions likewiſe that the lungs were a little red on their outſide.

Caſe the thirteenth. In this laſt is mentioned a girl of nine years of age, who on the third day of this diſeaſe got a violent coughing for ſome hours together, and coughed up a piece of the membrane which was black. Dr. *Home* ſuppoſes this is owing to the membrane being dry, as in the other patient it had been white and ſoft. This child died likewiſe.

I have already mentioned ſomething of the mortality of this epidemy in *Sweden*, but, in order to ſhew plainly in what ſhape and nature it has appeared there, I will inſert ſome of the caſes which were communicated by the phyſician of the province of *Upland*, Dr. *Halenius*, and enumerated in the mentioned diſſertation by Dr. *Wilckes*. The firſt of theſe therefore is here

Caſe

Caſe the fourteenth. A youth, five years old, of a healthy conſtitution, in the afternoon of the 19th of *January*, 1762, grew ſleepy and feveriſh, and affected with a catarrh at the noſe, but no cough: the two following days he ſometimes walked about, ſometimes lay down, but always had a heat, grew more ſleepy, vomited, had a catarrh and ſneezing, and a ſmall running at the eyes. On the fourth day all was in the ſame ſtate; but towards night there came on a difficult deglutition and a more perceptible fever. The patient could not ſleep well till towards the morning. The fifth day we found the fever abated, but the difficulty of ſwallowing increaſed. On the tongue appeared now a white, firm, but ſoft membrane, and a great quantity of ſlime, which partly was vomited up, partly otherwiſe flowed out, and was the cauſe that no ſleep could be gotten before midnight. On the ſixth day he ſwallowed with greater eaſe; but the copious ſlime made the breathing, now otherwiſe eaſy, to ſound like a continual hiſſing or rattling. The fever was ſcarce perceptible. The patient had got ſleep in the evening, but this was diſturbed in the night by ſlime and frequent coughing. On the ſeventh day he was hoarſe towards noon, and the coughing dry and deep, which became more dry in the evening, and troubleſome till ſome viſcid ſlime was hawked up. The patient had now an eaſy deglutition, but fell into a profound ſleep, and got a quicker pulſe. Immediately after midnight the coughing ceaſed almoſt intirely, upon which followed a great reſtleſsneſs. On the eighth day, early in the morning, the breathing grew more difficult and quicker, the pulſe beating from 140 to 150 ſtrokes in a minute. Nothing would now avail in exciting the cough again, or promoting the expectoration: therefore the reſtleſsneſs and rapid breathing increaſed, which deprived the parents of this their beloved child. The patient uſed, during the whole diſeaſe, gentle purges, emetics, refrigerants, and expectorating remedies, gargariſms and ſyringes in the throat, applications of oil of olives with ſalt of hartſhorn; but the event was nevertheleſs fatal. The corpſe was opened, and in the

the windpipe was found ſuch an unnatural membrane as we have already deſcribed.

Caſe the fifteenth. The ſiſter of the above mentioned child was ſeven years old, and quite well during the diſeaſe of her brother; therefore, nobody ſuſpecting ſhe would ſhare the ſame fate, no preſervative was uſed. On the fourth of *February*, in the morning, ſhe began to complain of a ſevere head-ach, was ſleepy, red in the face, had a perceptible fever, and was confined to her bed. She puked once, fell into a gentle ſweat the following night, and ſlept well. The next day ſhe was ſomething better in the forenoon; but after that, eſpecially towards night, ſhe began to complain of an head-ach and tooth-ach, and a ſtronger heat. The tongue began now to grow white: the patient bled ſometimes by the noſe, but very little. The breathing was already hiſſing, whether the air was drawn in by the noſe or the mouth: the night was uneaſy. On the third day in the morning ſhe had ſome *nauſea:* the tongue was whiter: below, in the corners of the noſe, was a ſlight eruption with white points, but red at the ſkin: on the upper lip were likewiſe diſcovered two ſuch pointed dots of the eruption. The fever was ſcarce perceptible on this day, but towards the evening it was as ſtrong as before: the deglutition grew more difficult as it advanced nearer towards night. On the fourth day the fever was again leſſened: ſhe now neither complained of any head-ach nor any conſiderable difficulty of ſwallowing; but ſhe could not eaſily hawk up the ſlime: a dark cruſt was obſerved in the mouth, and on the *uvula* and *velum palati:* the tongue whiter: the fever increaſed again towards night. She was freed of much ſlime by ſyringing the throat, but ſleep, which uſed to give her ſome relief, was nevertheleſs prevented by the viſcidity of the ſlime and its afflux, beſides a troubleſome ſneezing, which was cauſed by a humour diſtilling from the noſe. On the fifth day matters were nearly in the ſame ſtate. The cruſt in the mouth ſomething thicker, and ſpread to the ſides. Towards night ſhe ſneezed oftener, which deprived her moſtly of ſleep: the cough was leſs violent. The ſlime was

looſe, but nevertheleſs not hawked up. On the ſixth day ſhe ſeemed tolerably well, and got rid of much ſlime by ſyringing. Towards night ſhe was weak, and ſo ſleepy that ſhe ſcarce could keep her eyes open, but the ſlime prevented any reſt. The cruſt on the *velum palati* was ſtill adherent, though a part of it had looſened. On the ſeventh day, at ten o'clock, ſhe looked chearful again; but ſhe coughed, and ſneezed, a thin liquor being diſtilled from the noſtrils: no reſt was procured before midnight, partly on account of the breathing being difficult and hiſſing, partly becauſe the ſlime was in ſuch a quantity, and ſo viſcid that it was feared it would ſtifle her, eſpecially on account of her being ſo uneaſy and weak, that ſhe did not ſpit it out. On the eighth day ſhe was chearful again, ſometimes hawking up the ſlime with eaſe, and at laſt, after frequent ſyringings, ſeveral cruſts, of the ſize of a half-crown piece: theſe were viſcid and thick, whitiſh-grey on one ſide, and with bloody ſtreaks on the other. In the afternoon the pulſe was quick, but weak; the ſtrength abated, and the expectoration did not go on well; the coughing was deep and hoarſe, the voice was altered, the ſlime grew thicker, and the breathing more rapid. After a change of anxiety and much uneaſineſs ſhe fell into a profound ſleep. The weakneſs increaſed, the cough diminiſhed, and ceaſed intirely after midnight. What ſhe drank cauſed pukings, and returned through the noſe: the deglutition was nevertheleſs eaſy. On the ninth day, early in the morning, ſhe hawked up a little of the above-mentioned cruſts. The anxiety, weakneſs, and the quick pulſe and breathing increaſed gradually. An offenſive ſmell from her throat was perceptible even at ſome diſtance. The urine was clear, and reſembled ſmall-beer, but depoſited a white thick ſediment at the bottom. The breath was drawn by the mouth and exhaled through the noſe. At laſt ſhe was ſuffocated as it were, and died at three o'clock in the afternoon.

Caſe the ſixteenth. Mr. *Gibſon* ſpeaks of a child who got the better of this diſeaſe, after having hawked up a great quantity of matter and large pieces of a membrane.

Caſe

Caſe the ſeventeenth. Mr. *Raef* has made mention to Dr. *Home* of a boy between five and ſix years of age, who, on the fifth of *Auguſt*, 1764, got affected with a catarrh at the noſe and a hoarſeneſs. On the eighth day the breathing grew difficult, the voice cracked, together with a fever. As the child was in a gentle moiſture or ſweating, he preſcribed a mixture with *ſpiritus Mindereri*. On the ninth the pulſe was quicker, but the child did not hawk up any thing. Blood was drawn off, a clyſter injected, and a bliſter applied to the neck. On the eleventh of the ſame month he was told that the child by a violent coughing hawked up a piece of two inches ſize, which reſembled a membrane, and was white and viſcid. In the evening it could plainly be perceived, that the ſlime hawked up was mixed with *pus*. The child did not recover its voice till after three months. It is uncertain whether it was this diſeaſe which affected the boy mentioned by Dr. *Starr*, in the Philoſophical Tranſactions, No. 495. Art. VI. He was ten years and a half old when he fell ſick, and ſeveral times coughed up ſome of the membrane, but died at laſt. The Doctor does not mention any alteration in the voice, but that the patient retained his perfect underſtanding till the laſt, and without having been delirious.

Caſe the eighteenth. This diſorder of the windpipe was ſpread at *Fahlun* in the year 1761. Mr. *I. F. Schulz*, ſurgeon of the mines, has ſent me an account of it; but I will here only relate the caſes in which there was ſomething extraordinary. For inſtance, a girl, eight years of age, complained of ſomething in the throat, but diſcovered this her illneſs to a woman-ſervant only, ſo that her parents did not know any thing of it. Four or five days after ſhe eat a ſoup of heps with a very good appetite. On the ſame day, at eight o'clock in the evening, the child got affected on a ſudden with a difficult breathing, eſpecially on drawing its breath, and the voice ſounding as we have often mentioned. *Rob. Sambuci* with a camphire powder was given to her, an emollient fomentation was applied round the neck, rhubarb was

preſcribed, a bliſtering and the vapours of an emollient decoction of herbs were uſed. The next morning ſhe took the *ſal cornu cervi*, and in the afternoon both the *oxymel ſimplex* and *ſcilliticum:* but all was to no purpoſe, and without procuring any relief. However the deglutition was quite eaſy. It is remakable too that there was no ſign of a fever; though the pulſe was irregular, and often intermittent. The girl died on the following day at four o'clock in the morning: ſo that the difficult part of the diſeaſe only laſted thirty-two hours.

Some ſmall ſtreaks of blood were obſerved on the outſide of the breaſt, but no ſwelling neither there nor on the neck. The lungs were found without injury; only behind, towards the back-bone, they were found ſomething dark, and filled with clotted blood. No ſign of any inflammation could be perceived either in the lungs or the windpipe; but this laſt was lined with a præternatural membrane, which in ſome places was more adherent than what uſually has been found in others. In the upper part of the windpipe was ſome *pus*, which however had no bad ſmell.

Caſe the nineteenth. A girl, ſix years of age, who had a good voice for ſinging, grew hoarſe without any apparent cauſe; but ſeemed otherwiſe very well. A few days after, on the thirteenth of *November*, 1761, in the evening, ſhe was ſuddenly taken ill by a difficult breathing, attended with a ſtrange ſound, as heretofore deſcribed. Four ounces of blood were immediately taken from the arm, but this afforded no relief. Alſo *oxymel ſcilliticum*, purges, clyſters, and vapours of emollient herbs, were preſcribed, but without effect. No fever was obſerved: the pulſe intermitted ſomething: the urine was in ſmall quantity, and like water. She ſwallowed ſome tea and thin ſoups in the mornings; but in the afternoons and evenings ſhe would not uſe any thin food, but chewed and ſwallowed dried prunes and raiſins. She had no anxiety in the day-time, amuſing herſelf with toys; but ſhe was rather uneaſy at night, ſleeping very little at a time. However, notwithſtanding that ſhe often hawked up ſmall membranes and a quantity of matter,

ſhe

ſhe did not recover, but died on the twenty-firſt of *November*, being ſuddenly and unexpectedly ſtifled by the diſeaſe, as ſhe was ſitting upon the knees of the woman-ſervant.

The corpſe was opened, nothing unuſual being found on the ſurface of it. The lungs were ſound; but the membrane ſo often mentioned was found in the windpipe, and was very looſe: a frothy and pale yellowiſh matter was obſerved in the upper part of the windpipe and *bronchia*.

Caſe the twentieth. The ſiſter of the above mentioned girl was four years of age, and lived in the country during the illneſs of the former, but was ſent to town at her burial. She remained a few days in town, dreſſed in the cloaths of the deceaſed, and went into the country again. The following day ſhe grew ſick, had a gentle puking, and was obliged to lie in bed. She vomited again, and amongſt that which ſhe threw up there was ſome blood mixed. The diſeaſe was otherwiſe quite ſimilar to that deſcribed in the laſt-mentioned caſe. She could not be prevailed on to uſe any thing; but ſhe died, after having been ſick forty-four hours.

The corpſe being opened, a ſimilar præternatural membrane was found in the windpipe, and a quantity of thin matter both there and in the *bronchia*.

Dr. *Home* has obſerved in thoſe bodies which have died of this diſeaſe, and been opened afterwards, that if the unnatural membrane has not been ſeen elſewhere in the windpipe, it has however always been found on that ſide of it which is next to the *æſophagus* or gullet, where the cartilages are defective, or do not continue their circles, and in which place the greateſt number of glands have their ſeat.

By what has hitherto been related, this diſeaſe will eaſily be diſtinguiſhed and known. Conſequently, if a child grows indiſpoſed, complains of any illneſs in the throat, or of an obtuſe pain in the throat, and ſeems to have ſome difficulty in breathing, then we muſt inquire, 1. If this diſeaſe be ſpread at preſent? 2. If the air is or has been cold and moiſt? 3. If the child has lately had a tedious catarrh, after an antecedent hooping-cough, ſmall-pox, or the meaſles?

If it has any heat and thirſt, and whether the face looks puffed up?

If theſe ſigns be found, then there is already ſome reaſon to apprehend the *croup*. But, in order to be quite certain, we ought, 1. To examine whether there be any tumour on the anterior part of the neck. 2. We muſt feel and gently touch on it, well obſerving whether that place be more tender. 3. If the child can ſwallow without difficulty. 4. If the breathing is laborious and quick. 5. If the pulſe be quick, hard, and ſtrong, in the beginning of the diſeaſe; but, after a few days, grows ſoft, weak, and rapid. 6. If there be any cough; if that is quick and ſuffocating when it comes on. And, 7. If the voice be hoarſe, ſharp or acute, and broken, eſpecially when the child cries, coughs, or calls out.

They will likewiſe enable us to diſtinguiſh this diſeaſe from others which bear ſome reſemblance to it; for inſtance, from the ſquinzey (*cynanche*) in which the ſuperior part of the windpipe is inflamed. For, 1. The ſquinzey is not a diſeaſe peculiar to children. 2. It is attended with a very difficult deglutition. 3. In that diſeaſe a heat is felt in the throat, which ſometimes increaſes with ſuch an acute pain, that the patients ſometimes grow deſperate and attempt their own life. 4. There is no ſign of any tumour on the outſide of the neck.

As far as we can judge from the foregoing obſervations, this diſeaſe is a rheumatiſm or catarrh of the windpipe. For there being a quantity of ſlime continually diſcharged from the ſmall orifices of the glands, eſpecially on the ſide where the cartilages are defective, this is congealed into a membrane on coming in contact with the air; but this membrane, when formed, is prevented from cementing with the windpipe by the continual ſucceſſion of mucus and ſlime diſcharged from thoſe glands. This appears the more probable, as no ſign of ulceration has been found on the natural membranes of the windpipe *.

It

* In the putrid ulcerous ſore-throat (which the *French* call *mal de gorge gangreneux*) it frequently happens that the

It is not ſo extraordinary a circumſtance that ſimilar membranes are formed by ſlime. An inſtance of ſuch a membrane in the windpipe is related in the Phil. Tranſ. abridged, Vol. III. p. 60. Mr. *V. Haller* mentions ſeveral in his Elem. Phyſiol. T. XIV. p. 149. Similar membranes have been formed in the guts and carried off by ſtools, which happened to the learned *Lipſius*, Profeſſor of Hiſtory at *Leyden:* this gentleman being anxious, and apprehending it to be a piece of the bowels, till his friend Dr. *Heurnius* undeceived him. Several other ſuch caſes are atteſted by Dr. *V. Haller*, l. c. T. VII. p. 157. Compare this with what Mr. *Warren* ſays of the *polypus* in the *bronchia*, in the Medical Tranſactions of the College of Phyſicians at *London*, Vol. I. Such a rheumatiſm, or catarrh, ſometimes happens to the bladder, ſo that the ſlime in the urine either congeals or grows hard, or this may happen to it after being diſcharged in a glaſs, ſo that it does not run out though we turn it upſide down. I myſelf have ſeen an inſtance of this. Mr. *Lieutaud* calls it a catarrh in the bladder.

This catarrh of the windpipe is cauſed, no doubt, by a cold and moiſt air; but I know not why it chiefly attacks the windpipe. Dr. *Home* is of opinion that it ariſes from the vapour of the ſea. But I cannot think ſo, as the diſeaſe appears likewiſe in places far diſtant from the ſea.

As the windpipe is filled with much ſlime and an unnatural membrane, it is not at all ſurpriſing that the patient gets a difficult breathing and a ſtrange-ſounding voice; for the air cannot ſo eaſily paſs thro' a narrower paſſage; and the blood is always much interrupted in going down from the head when we have an aſthma, or any difficulty of breathing; and this cauſes the face to appear puffed up and ſwelled.

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interior membrane of the windpipe and gullet, naturally belonging to them, is thrown up either by coughing or reaching. See the *Journal de Medecine*, 1768, *September*, p. 202. the abridgment of Mr. MARTRAU DE GRANDVILLIERS *Deſcription des Maux de Gorge Epidemiques & Gangreneux*.

That the diſeaſe is contagious, appears from the twentieth caſe, and from what happened in the pariſh of *Raſbo*.

The third caſe ſhews that a perſon can have this diſeaſe more than once.

By the above obſervations we alſo learn, that on the firſt days the pulſe is commonly quick, hard, and ſtrong; the face red; and that leeches and bleedings have then been of ſervice. We find likewiſe that the windpipe often is inflamed in the inſide, and that the blood has an inflammatory cruſt (ſee the eleventh caſe). From hence it follows, that the diſeaſe is of the inflammatory kind, and requires evacuations. But, when the diſeaſe has been of ſome days duration, the pulſe is quick, ſoft, and weak, the uneaſineſs increaſes, the ſtrength diſappears, the ſlime or *mucus* likewiſe increaſes, and takes the appearance of *pus*, which, filling the *bronchia*, makes the breathing and the circulation of the blood through the lungs more difficult. Dr. *Home* calls the firſt of theſe periods the *ſtadium inflammatorium*, and the ſecond *ſtadium purulentum*. During the firſt of theſe we may ſtill have ſome hopes, but in the latter hardly any at all. Evacuations are hurtful in the laſt. The only thing we then wiſh for is that the patient may cough up a great quantity of matter and the membrane alſo, though even that has ſeldom cured it. See, among others, the 13th, 16th, 17th, and 19th caſes.

Hence we find of what importance it is to diſtinguiſh well theſe two ſtadia or periods, both in reſpect to our forming a judgment whether the patient is likely to recover or not, as well as to the choice of remedies. The diſtinction is ſometimes very difficult, and in that caſe Dr. *Home* adviſes to take notice of the urine; for, if that depoſits a white ſediment like *pus*, it is a ſign of the patient's being in the ſecond ſtadium, and conſequently in great danger, when all evacuations are hurtful, and accelerate death. We ought chiefly to be attentive to all theſe ſigns when the diſeaſe begins gently, and comes on as it were by ſtealth, or begins as an intermittent fever; for, if we are not then on our guard to oppoſe this evil, the patient will

not recover, and dies when we leaſt expect it: ſee the 15th caſe. Parents ought likewiſe to learn by this, how neceſſary it is immediately, in the beginning of a diſeaſe, to aſk good advice of thoſe who know how to give it.

The beſt and moſt effectual remedy we can have againſt this diſeaſe is bleeding: but that ought to be performed immediately, and in a ſufficient quantity, ſo that the pulſe abates. If the pulſe ſhould increaſe again after ſome hours, we ought to bleed again, as we ſee from the ſecond caſe: but if the ſecond ſtadium is already begun, no bleeding ought to be performed, as it was by miſtake in the fifth caſe.

After bleeding we ought to apply leeches on the fore part of the neck, juſt where the windpipe paſſes. They are here of the ſame ſervice as in a pleuriſy, when they are applied where the pain is felt, or in inflamed eyes when applied around them.

Further, we ought to prepare a tea of elder flowers, adding to it a little vinegar *, and dip a ſpunge in it, which we are to hold under the noſe, or lay it on a napkin on the breaſt, ſo that the patient can breathe in the vapour of it. By this we hope partly to diſſolve the ſlime, and partly to promote its being hawked up.

Bliſters will diminiſh the catarrh of the windpipe, and drive it out to the ſkin; conſequently we ought to apply one to the nape of the neck, or on the ſides of it. It will not do to apply it on the forepart, where the leeches have been ſucking. We know very well what an incomparable effect bliſtering has in a rheumatiſm, tooth-ach, in the common ſore-throat, and in all colds or rheumatiſms in what place ſoever; ſo that there is reaſon to expect a good effect from it in this diſeaſe likewiſe. But bleeding and leeches

* Laſt year Profeſſor *Bergius* found the vapour of vinegar to have an excellent effect in this diſeaſe, and therefore cauſes the patient to ſmell to a napkin dipped in vinegar; beſides which he orders the pillow and the curtains of the bed to be ſprinkled with vinegar.

ought,

ought, without diſpute, to have been uſed beforehand.

If this cure ſhould be thought too rough, we may wrap the neck in a moderately warm emolient poultice, to which is added ſome muſtard ſeeds; this we ſuffer to remain on the neck till the ſkin grows a little reddiſh, with ſmall elevated points. After that we may leave the muſtard ſeeds out, and continue with the emolient poultice, which is to be changed for a warmer one as often as it grows cold. Such poultices may be prepared for inſtance of three ounces of mallow leaves boiled in water to a proper conſiſtence, adding to it two drachms of bruiſed muſtard ſeeds at the end of the boiling, in caſe it is to act as a ſinapiſm.

It is neceſſary to keep the body unbound with clyſters, or giving every day the *electarium lenitivum*, or a few tea ſpoonfuls of the *pulpa caſſiæ recent. extracta*, or of *magneſia alba*, *Edinb.* mixed with ſugar; or we may prepare a clear milk whey (*petit lait*) and diſſolve a little manna ſugar in it, and give it the child to drink.

By the ſixth, ſeventh, and eighteenth caſe, we find that ſudorifics have been tried, probably in order to drive the humours to the ſurface. But nothing has been gained thereby; nor does it ſeem that emetics have done any good.

Time and experience muſt determine whether *bronchotomy* will be of ſervice, if for inſtance it is tried in great neceſſity; likewiſe if the coughing up of the membrane can be promoted by ſmoaking cayan pepper (*capſicum*) in the room where the patient lies.

In the narrative of the *collegium medicum* to the parliament at *Stockholm*, during the diet 1769, I find ſome of the phyſicians of the provinces have ſeen and deſcribed this diſeaſe, eſpecially Aſſeſſor *Wahlborn*, p. 58, Doctor *Blom*, p. 9, and Doctor *Engſtrom*, p. 300; their caſes deſerve to be read. We want to learn why the windpipe is but very little tender, or little irritable, in this diſeaſe; and to know the time when the membrane in fact is formed?

CHAP.

CHAP. XXVI.

OF THE ITCH OR SCAB.

THE children of the rich, are ſeldom affected by the ſcab; but this diſorder is more common among the lower or poorer ſort of people. The former have ſufficient attendance: the room where the child lives is kept clean, the nurſe has cloaths and linen to ſhift it with, and to keep herſelf neat; ſhe is likewiſe obliged to ſhift the child often, and get dreſſings ſufficient for that purpoſe. The poor can neither afford ſo much ſhifting nor attendance; they are taken up with many other occupations, ſo that they have not time to waſh and clean ſo often as it is required; therefore I cannot help thinking but that a ſluttiſh and naſty manner of life is the cauſe which gives occaſion to the ſcab. The ſecond cauſe I look upon to be a contagion, not by the air, but by contact, any one infected touching a ſound perſon, or only his cloathes being touched or worn by him *. A perſon who only has ſome pimples, will infect a child only by keeping it on his arms for a little while. If its waſher-woman or her aſſiſtant have the itch, they will eaſily convey the contagion to the child. The infectious matter itſelf is neither vapour nor any hereditary or accidental acrimony, ſalt or acidity in the blood, but conſiſts in a number of living animalcules or ſmall inſects, (*Acarus Siro Linn. Syſt. Nat.* Edit. xii.

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* Many in *America*, eſpecially the black ſlaves, are troubled by ſort of eruption with ſores and ſmall fungoſities reſembling ſtrawberries. This diſeaſe is called *Frambœſia Americana*, and is propagated partly by immediate contact, partly by ſome flies, which after having ſettled on a ſore of an infected perſon, go and ſettle on any little pimple of a ſound perſon. See *La Noſſol. Method. de Mr. Sauvages*, T. iii. p. 11. p. m. 429.

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T. hp. xi. p. 1025), which insinuate themselves into the body under the thin skin, and there propagating, gnawing and creeping, excite an irritation or itching; this again causes a flux of humours to that place, which raises the thinner skin in pimples, and these being scratched, and the thinner humour evaporated, it will dry up in crusts. This opinion is received not for the sake of any idle amusement of reasoning, but it is founded on experience. *August Hauptman*, *Bonomo*, *Schwiebe*, and several other men of veracity, have repeatedly, during different seasons, and on people of different sexes and ages who had the scab, found such *animalcula* on their skin in the wrinkles of it, and chiefly in the edges about the pimples. These little insects have been put to a minute examination by magnifying glasses, been drawn, and found to lay eggs, increase surprisingly fast, and to an innumerable quantity; they are likewise observed to keep alive for several days, though taken out from the body. Hence we find,

1st. Why the scab is so contagious? Because these *animalcula*, in a contact, are easily conveyed from one person to the other.

2d. Why uncleanliness promotes the scab? Because all nastiness is agreeable to these *animalcula*.

3d. Why children are more subject to scab than full-grown persons? Because the skin of children is more soft and full of pores, so that the *animalcula* more easily can get under their thin skin.

4th. Why the eruption first appears on the hands? Because with them are persons or cloathes first touched where these *animalcula* may have settled; for if the scab was owing to a salt or acrimony in the blood, the eruption would first appear in the parts where the perspiration is strongest.

5th. Why it is necessary and conducive to wash our hands often, nay likewise in the evenings? Because we then wash away the *animalcula* which may still sit in the wrinkles of the skin, and not yet have crept in under it; and as we touch more things in the day time, and the hands then are exposed to get more dirty than during the night, it is more adviseable to wash

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the hands in the evenings, than only to do it in the morning.

6th. Why the ſcab is repelled by cold, and breaks out again when we are heated by any great exerciſe? Becauſe theſe living *animalcula* fly both from cold and heat.

7th. Why itching chiefly comes on at certain hours? Becauſe theſe *animalcula* ſtir and feed at certain hours, chiefly in the evening, and are at reſt during the interval.

8th. Why the ſcab increaſes and changes place? Becauſe the little animals increaſe very faſt, and change their place of abode.

9th. Why the ſcab is not a neceſſary diſeaſe? Becauſe we are not born with theſe *animalcules*, but they are communicated by infection. The ſame is the caſe with the ſmall-pox, meaſles, hooping-cough, and the venereal contagion, which are not neceſſary evils to any perſon, but can be avoided if we keep clear of the contagion.

10th. Why the itching and ſcab diſappear when we apply remedies of oil, ſulphur, quick-ſilver, lead, onions, *radix helenii*, tobacco, lye of ſalt of tartar and the like? Becauſe ſuch remedies commonly kill inſects, and the *animalcules* fly further into the body in order to avoid it; therefore one may eaſily find how dangerous it is to apply external remedies alone.

11th. Why the ſcab ſo eaſily returns? Becauſe the contagion is ſo eaſily caught. Beſides, we know not how long theſe inſects live in our cloaths, and theſe being put on before they are quite killed, the diſeaſe is thereby contracted again; the *animalcula* which ſettled at the ſurface of the ſkin may be killed, but there may be others hiding themſelves deeper into the body, which creep out to the ſurface of it after ſome time.

12th. Why a child got the ſcab immediately on the place where its nurſe powdered it with flour; this Archiater *V. Linne* once obſerved; ſee his *Amoenit. Acad.* vol. v. p. 95. The reaſon of this was, that the ſame kind of inſects live in flour.

13th. Why the itching and ſcab grows worſe by ſcratching ourſelves? Becauſe beſides the pain it cauſes,

cauſes, the *animalcules* being ſtirred, are put in greater activity, irritate and creep about, and conſequently convey the ſcab to other parts of the body.

14th. Why a ſingle ſcabby perſon can infect a whole army? Becauſe theſe inſects breed and increaſe exceedingly faſt, and thrive very well in dirty places, as for inſtance in a camp, where it is almoſt impoſſible to preſerve cleanlineſs.

15th. Why thoſe who are confined in large hoſpitals and priſons, are generally infected by the itch? Becauſe all ſorts of people are received there, part of whom may carry the infection with them; beſides we cannot keep ſufficiently clean where a number of people live together; not to mention their want of neceſſaries to ſhift themſelves with.

16th. Why the ſcab is more eaſily cured in the ſummer ſeaſon than in the winter? The cold weather drives the *animalcula* farther into the body; but the mild ſummer allures them to approach the ſurface, ſo that they are more eaſily killed by the remedies coming in a nearer contact with them; beſides they are more eaſily expelled to the ſurface after the ſtronger exerciſe one uſually takes in the ſummer, for this cauſes a heat in the body, ſo that the inſects to avoid the ſtronger heat go out to the ſurface.

17th. Why old women and quacks drive away the ſcab ſooner than phyſicians? Becauſe the former begin directly with unguents and external applications, not knowing the dangerous conſequences of cauſing the ſcab to ſtrike in.

I have tried a great many remedies againſt the ſcab, and at laſt found that nothing is more effectual and more to be depended on, than what at all times has been recommended againſt this diſeaſe, I mean ſulphur or brimſtone uſed internally and externally at the ſame time. It is very well known that ſulphur kills inſects. And it is peculiar, that a piece of brimſtone which otherwiſe does not ſmell, will by means of the warmth of our body give a very ſtrong ſcent, ſo that the ſweat of itſelf ſmells ſulphurous after having taken any of it. Therefore gold and ſilver worn on the body during that time

time will get a ſwarthy caſt. The inſects fly from and die of the ſmell of it; and this is the reaſon it is ſuch a ſpecific in the itch. Therefore in order to cure a child who has the itch, we muſt take care,

1ſt. To keep the room neat and clean, and to ſhift the child often, keeping its cloaths well waſhed and clean, and that the mother and nurſe alſo be clean, beſides ordering that none who are ſcabby, be allowed to handle or come near the child.

2d. That the room be kept moderately warm.

3d. To give the child in warm cows milk, or that of the nurſe, from two to ten grains of *flores ſulphuris* very well ſifted, or more according to its age, two or three times in a day. If it purges, as it ſometimes does, we muſt give a ſmaller doſe of it.

4th. In caſe this is given internally alone, and it does not make the ſcab diſppear within eight days, then we prepare an ointment of *flores ſulphuris* with cream, anointing the child with it only around the joints of the hands and feet every morning till the the ſcab is quite gone. But in order that it may not ſtrike in, we continue giving of ſulphur internally during the ſame time. I order the ointment to be performed in the morning, becauſe the *flores ſulphuris* are taken internally likewiſe in the day-time, ſo that the inſects may be attacked on all ſides at the ſame time and die. We may give a gentle purge in the beginning of the cure, in caſe the ſtomach and bowels are foul, otherwiſe there will be no occaſion for it; for the ſcab has never as yet been cured by laxatives only, unleſs they have operated ſlowly, ſo as to enter into the blood, and contain ſomething that kills inſects.

If the child be ſtill tender, and in its infantile ſtate, ſo that we do not chuſe to give it remedies, then it will be ſufficient if the nurſe take *flores ſulphuris* in warm milk, as much as will cover two or three points of a knife each day. I have myſelf known that to cure the itch. When the eruption has been very copious, for inſtance on the feet, then I have ordered cabbage leaves to be applied on it with great advantage. This makes the ſores to diſcharge a great quantity of humour in the beginning, but they dry and heal up very ſoon after that; the hands are very ſoon cleared by waſhing them

them often during a couple of days in a ſtrong decoction of juniper.

The itch, from a venereal cauſe by inheritance of one's parents who have had that diſeaſe, or the venereal itch communicated by the nurſe, will be treated of in the next chapter.

CHAP. XXVII.

Of the Cure of Children born with the VENEREAL DISEASE, *or infected with it by Nurſes.*

THE venereal diſeaſe (*Lues Venerea*) came firſt into *Europe* in the year 1494. It was brought over by the *Spaniards* from the iſland of St. *Domingo* (*Hiſpaniola*), at the diſcovery of the new world, under the command of *Chriſtopher Columbus*; but nevertheleſs it is not mentioned till the following year in the *French* campaign, when the *French* king *Charles* VIII. with an army of 80,000 men went to *Naples*, his troops ſuffering very much by their connections with the infected women who had already contracted the contagion from the *Spaniſh* ſoldiers. From *Italy*, *France* and *Spain*, it afterwards advanced to the other parts of *Europe*, as alſo to thoſe parts of *Africa* and *Aſia*, which are next to the *Mediterranean*, and at laſt to *Turkey*, *Perſia* and *Japan*.

This diſeaſe was in the beginning very violent, and the poiſon muſt then have been much ſtronger than at preſent, as it then killed a great many; but afterwards it has decreaſed in its violence by degrees, and ever ſince the year 1610, has not got any additional ſymptoms, as before happened. It now commonly firſt affects ſome of the external parts before it enters the blood, and more eſpecially thoſe which are covered with a thin ſkin, as the lips, the inſide of the mouth, and other parts which have ſuch a covering *. Should the diſeaſe

* Mr. *Faber* (*Traité des Maladies Veneriennes* T. i. p. 12) mentions the following caſes. A man who had *caries* and holes

diſeaſe decreaſe in the ſame proportion as it has hitherto done, in reſpect to the violence and number of the ſymptoms, it muſt at laſt be very eaſy to cure, or intirely ceaſe.

The diſeaſe is chiefly contracted by connections with an infected perſon, and we may depend upon it that the greateſt number thus receive the contagion, although it does not always ſhew itſelf immediately by any external ſymptoms; becauſe the poiſon is ſometimes ſo weak, that it cannot cauſe any pain, inflammation, ulcer, or diſcharge of matter in thoſe parts which firſt ought to ſuffer; but it enters the blood nevertheleſs, conceals itſelf there for ſeveral years, till at laſt it is revived again, and breaks out either in a plain or diſguiſed venereal diſeaſe. It may be alſo very innocently contracted, for inſtance, when a friend uſes our bed; if he then is infected, ſweating much during the night, or having eruptions, we may eaſily be thus unfortunate. The honeſt *Fabr. Hildanus* gives us an inſtance of this in his *Cent.* v. *Obſ.* 97. We are in the ſame danger in uſing cloths or ſheets lately uſed by infected perſons. Mr. *Sauvage* (*Noſol.* Tom. iii. p. 84) gives us an inſtance of a ſurgeon in *Montpellier*, who became

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holes in the *oſſa palati*, got likewiſe a *fiſtula lacrymalis* on each ſide of the noſe. Several able gentlemen tried to cure him, but to no purpoſe. The great ſurgeon Mr. *Petit* got him at laſt to confeſs that he had had communication with infected women, though to his knowlege he never was in the leaſt injured by it; nevertheleſs the poiſon was gone into the body. Mr. *Petit* cured him intirely with mercurial ointments to the amazement of all. Mr. *Faber* himſelf was conſulted by a lady thirty-one years of age, and married at her eighteenth; ſeven years after that, ſhe got affected with a ſevere inflammation in the throat, with fever and delirium; being relieved from this, a tumor remained, which was reſolved in three months time. After that ſhe enjoyed a tolerable good health for about a year; but for the three years next following, ſhe was very ſickly, and affected either by colds, or ſome diſorder in the head, breaſt or ſtomach. At laſt ſhe got a *diarrhœa* which continued for a couple of months, and firſt left off when ano-

became infected by laying under his head a dirty pillow of a ſalivated perſon. The ſame *Hildanus* ſpeaks of a young ſervant woman, who got the pox by uſing the ſtockings of a boy infected with this diſeaſe. We ſee therefore how eaſily the venereal diſeaſe may be propagated even to ſuch as are innocent. Dr. *Linderſtolpe*, late phyſician to his Majeſty, in a Treatiſe on Venereal Diſeaſes, p. 35, ſays that a young gentleman, only by a kiſs, infected his own ſiſter. The great experienced *Foreſtus*, relates of a man who infected his own wife with the *French* diſeaſe; ſhe again propagated the diſorder to her child in the womb; that being born, infected its nurſe, who gave it to two of her own children. Several years ago a reputable merchant in *Stockholm*, his wife, three children, a ſervant woman, and two apprentices of the ſhop, were infected by a nurſe imprudently choſen. *Antonius Gallus* tells us, that a midwife got the foul diſeaſe by relieving an infected woman. *Burgeſius* mentions an infected midwife, who tranſplanted the ſame diſorder into thirty-five families. A *Dutch* phyſician, *Antonius Everhaers*, in a ſmall pamphlet printed in the year 1661, gives an inſtance of a chaſte woman, who brought the diſeaſe on ſeveral lying-in-women by ſucking out their breaſts, ſhe not knowing herſelf to be infected. We may likewiſe read of ſuch ſimilar inſtances in a treatiſe on the *hypochondria* by the learned Dr. *Bilgver*, p. 71, —75.

When the parents have a venereal diſeaſe, it is very natural that the children they beget will be born with the ſame. But as the poiſon (*virus venereum*) at the

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ther diſagreeable diſcharge appeared, which however was accompanied with no other pains than cuttings in the womb Her huſband enjoyed perfect health, but had been before his marriage ſeveral times affected with the faſhionable diſeaſe, which had been ill cured and ſtopped by aſtringents. He had for the preſent no other diſorder than now and then a herpes (*dartres*), which diſcharged a humour reſembling that which he had ſeen flowing from another place. Mr. *Faber* did not want more light; he let them both uſe mercurial ointments.

time of conception may either be active, vigilant acute; or inactive, blunt, and dead as it were; its effect on the child will alſo be different. If the poiſon is active at that time, the child in the womb will generally loſe its life; therefore we find ſuch unhappy mothers often miſcarry or are brought to bed with dead children; and in caſe they be brought into the world ſtill alive, they nevertheleſs will be found with ſores and other evident ſigns of the venereal diſeaſe. Should the poiſon at ſuch a time be leſs active, the child may be born with a healthy appearance, but after ſome time, its body will break out with ſores and boils. But when the poiſon at the time of conception, lies dormant, either naturally, or by ſome remedies which the parents have uſed, and by which it has not been quite extirpated but only weakened, the children will ſcarce ever get any venereal diſeaſe. The contagion has then undergone a change, and cauſes the rickets, or *ſcrophulæ* (*des ecroules*) or other diſtempers, that we hardly would expect to ariſe from ſuch a cauſe. Such children grow tender and weak, as alſo their offspring, from generation to generation. In ſuch a manner a whole nation may degenerate and be corrupted *. From the above-mentioned we perceive why children born by ſuch parents ſometimes are affected with ſome of theſe ſymptoms, ſometimes keep up a healthy appearance. In the latter circumſtance the child has had the good fortune to be begotten and born, when the contagion in the parents is very much weakened, though not quite extinct, by means of a very good diet, or of ſome remedies; therefore it may at another time again be kindled by an irregular diet or ſome other means, and like a ſeed, reco-

* One would hardly believe, that leacherous women could cauſe more pains and deſtruction than powder and ball! This however king Philip V. experienced when the *Portugueſe* army encamped near *Madrid*; half of his men were infected by whores, who with that intention, and of their own impulſe, paid viſits to the enemy: ſee *Supplement aux Eſſais Hiſtoriques ſur Paris*, p. 75.

ver and multiply in ſuch a manner, that a child born at ſuch a time, will be brought into the world dead, or with the above-mentioned foul diſorder. This is the reaſon that of ſeveral children of the ſame parents, which are in this unhappy condition, ſome enjoy a perfect health, whilſt both the body and ſenſes of the others are affected. From hence we likewiſe learn, how neceſſary it is that a man who intends to marry, ſhould never contract any ſuch diſeaſe; and in caſe he has been infected with it, to take care intirely to extirpate it, otherwiſe he will certainly make a virtuous wife and her offspring unhappy. As it is a matter ſo great conſequence, therefore he ought to conſult with one of the ableſt and moſt experienced phyſicians, and to diſcover all that he knows concerning it. If he has had a ſhanker, which by applying external remedies, has been repelled and diſappeared, without any tumor in one or both of the groins having been the conſequence, which might have been brought to a ſuppuration and perfectly cleanſed, then he may be certain that he is ſtill infected. Alſo if he has got a *gonorrhœa* which has been but badly managed, the diſcharge being of too long a duration or too ſoon ceaſed, either by itſelf or by any attack of a fever, or too early ſtopped by ſtrong purges, *balſamus capaivæ*, or aſtringent injections, or if he has indurated glands in the groins and down to the thighs, then he likewiſe may be ſure of being infected with the venereal virus in his body, and though he ſhould have a healthy appearance, he nevertheleſs wants a thorough cure; and it would be unconſcionable of any phyſician not to tell him plainly his bad ſtate of health *. The following inſtance may be explained by what above is ſaid.

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* It is through ignorance that ſuch a patient conſults people who do not thoroughly underſtand the matter. Thoſe give him palliatives, by which the external ſymptoms diſappear, and then they think all is well, though the poiſon is repelled into the blood, and ſooner or later will break out either with plain marks, or altered, and appearing under

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A young gentleman being affected with the venereal diſeaſe, went through the ſalivation, and thought himſelf very well cured. He married, and got with his wife two ſound children. Being a widower he entered the ſecond matrimony with a healthy wife. With her he got two daughters, who likewiſe thrived very well. At laſt the wife was frequently attacked by ſpitting of blood (*hæmoptyſis*) without any manifeſt cauſe, ſhe naturally having no weak lungs. She was afterwards brought to bed of ſeveral ſons, but all were maimed and rickety, and one of them affected with the epilepſy. Here the ſalivation had ſuffocated the poiſon for a time and weakened it, ſo that the firſt wife and her two children did not ſuffer any thing by it; neither the ſecond wife and her firſt children. But when the weakened poiſon by ſome means again recovered ſtrength, his wife became affected with the *hæmoptyſis*, and the children which were brought into the world after that, were born with ſuch diſeaſes as frequently are conſequences of the venereal diſeaſe, and which killed them one after the other. A child may likewiſe fall into ſuch a misfortune by ſucking a nurſe who has the pox, in this caſe it muſt be infected with the ſame diſeaſe. Under ſuch a misfortune the child is however happy when the evil is ſoon diſcovered, as it may then be cured by ſucking the nurſe during the time ſhe is put under a thorough cure. It is ſtill more difficult to cure it when it has left off ſucking, as the diſeaſe then has taken deeper root. By this we find how dangerous it is to chuſe a nurſe at random before ſhe is properly examined. From hence it will likewiſe appear how uſeful an inſtitution the office of nurſes in *Stockholm* is, if thoſe who want it chuſe to aſk its aſſiſtance. But from what is above mentioned, we likewiſe perceive that it is not a ſufficient precaution narrowly to examine the body of the nurſe who is to be

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quite different diſeaſes, which however have their origin from the ſame ſpring, and now are not ſo eaſy to cure, as they would have been before time and palliatives have altered the natural quality of the contagion.

choſen. We ſhould likewiſe ſtrictly inquire into her former conduct and way of living: Whether ſhe has ſerved in ſuch places where ſhe might eaſily have been infected? The venereal contagion may lie hidden for a long while in ſome people, eſpecially thoſe who are fat. Her own child ought alſo to be looked at: for by the children one often happens to diſcover the former way of living of their parents.

In the ſame manner in which a nurſe can infect a child, a child alſo born with the venereal diſeaſe may infect its nurſe: and here one thing is to be obſerved, which ſeldom fails, namely, that the parts which are touched firſt by the contagion will always ſuffer firſt. Therefore when a child is infected by the nurſe, it then gets corroding ſores in its mouth, but chiefly in the *fauces*, and the glands of the jaws and in the throat ſwell and grow hard. If the nurſe has gotten the contagion from the child, ſhe will firſt get the corroding ſores on her breaſts, and the glands in her armpits grow ſwelled and indurated.

But ſhould the contagion be brought on by lying with an infected perſon, or by wearing his cloaths, it will firſt break out in the ſurface of the body, in pimples, boils, tumors, ſwellings, and ſores.

This contagion will ſooner or eaſier infect children than thoſe who are rather advanced in years. Probably becauſe their ſkin is thinner and more ſubtle, and conſequently the pores more open. I would therefore preſcribe that a child never ſhould handle a ſpoon, knife, fork, or cup, which an infected perſon has uſed, as this might be of ſome conſequence to a child. But few full-grown perſons have contracted the pox in this manner, and much leſs by the air and the breath of the ſick. The contagion will ſoon break out in a child, if the venereal poiſon of the parents, eſpecially that of the mother, was any thing active at the time of conception. But if the parents have taken ſome remedy which palliates the diſorder, it is uncertain how ſoon it will appear. A girl, eleven years of age, was inoculated for the ſmall-pox with ſucceſs, and looked both healthy and handſome. After ſome months, an hereditary ſiphilitic diſorder broke

broke out, with ſwelled and ſuppurating glands on the neck, venereal ſcab, *caries* in the *os palati*, tumors in the noſe, and corroding ulcers in the face. A girl, two years of age, got the infection by a woman-ſervant, who chewed her victuals, the latter being found afterwards to have large ulcers on the body, and other infallible ſigns of the pox. The diſeaſe did not break out on the child till nine years after that, and appeared firſt as a ſcurf (*tinea*). *Spiritus mercurialis* was uſed during four months, (but with what accuracy I cannot tell) and ſeemed to cure her. Nevertheleſs the ſcurf re-appeared the next year, though more gentle: beſides which ſhe got corroding ſores in the throat, was often hoarſe, and her ſpeech paſſed as it were through the noſe. Two ſiſters got infected by a nurſe, who ſome time after, having quitted the ſervice of their parents, loſt her noſe by this diſeaſe. Nevertheleſs the evil did not break out on the children before they were about thirty years of age; except that the one had the ſcurf in its eighth year.

Whether the venereal contagion be owing to inſects, or to any corroſive acidity, or to ſome putrefaction, I venture not to decide. We only know that it commonly cauſes redneſs, heat, tenſion, pain, as alſo corroding ulcers in that part of the human body where it is fixed. We likewiſe know that it coagulates the lymphatic part of the blood, and chiefly faſtens itſelf to the *glandulæ ſebaceæ*. It is likewiſe to be obſerved, that venereal ulcers do not leave any mark (*cicatrix*) after them. We know beſides that this poiſon is not volatile, and conſequently cannot be ſpread round with the air: but when it infects any one, it is done by contact. *Vide Aſtruc de Morbis Venereis*, p. 125.

It is extraordinary that this diſeaſe may lay concealed, and that ſometimes for ſeveral years together, though we know for certain that the poiſon is in the body, and that it has infected others. A particular inſtance of this is given us by Mr. *Goulard*, in his *Oeuvres de Chirurgie*, T. II. p. 19. He was conſulted by a woman who was affected with pimples and ſores all over the body. After having examined her, he likewiſe ſpoke with her huſband, who had a healthy

and fat appearance. This man confeſſed that about fifteen years ago he had a tumor in one of his groins, and a ſhanker. Mr. *Goulard* judged from thence that the eruptions of the woman were venereal: the event ſhewed that he was not miſtaken; for, in the ſame proportion as a cure with the mercurial unguent was continued, her diſorders decreaſed, and at laſt diſappeared. He endeavoured to perſuade her huſband to go through the ſame cure, in order that he might not infect his wife again; but he would not hearken to it. The wife got the contagion a ſecond time, which then attacking her lungs killed her. The man would not be perſuaded to uſe any remedy, as he found himſelf healthy in every reſpect; and he continued in the ſame ſtate for more than twenty-five years after the loſs of his wife.

As the venereal contagion may lay concealed in the body for a long time before it breaks out in any viſible diſeaſe, ſo ſometimes it eaſily diſguiſes itſelf under the appearance of other diſeaſes which ſeem not to have the leaſt connection with the venereal. If we peruſe thoſe authors who have given an account of the diſorders which they had to cure, we ſhall find how very frequently the venereal contagion has been diſguiſed and hidden under each; as, inflammation of the eyes, ſores on the edge of the eye-brows, blindneſs, pain in the ears (*otalgia*), ſores in the noſe, ſore throats, thruſh, hoarſeneſs, cough, pains in the ſides, ſpitting of blood, aſthma, conſumption, ſevere reachings of a long duration, diarrhœa; not to mention hurts in the joints which children commonly get from ſuch hereditary diſorders, dyſentery or the bloody-flux, *lumbago*, *fluor albus*, hectic fevers, yellow fevers, cold fevers, as tertians and quartans; weakneſs in the articulations, rheumatiſm, gout, convulſions, and epilepſy.

The patient may have had any of theſe diſeaſes before he got infected; but by the contagion they are made worſe. We ſuſpect them to be venereal, and that they are to be cured with mercury, if the patient before has been affected with ſhankers and gonorrhœa which have been ill cured, or if he has had communication with ſuſpected and infected women. In caſe

neither the ſick perſon nor his friends chuſe to confeſs any thing of that kind, we find it very difficult to diſcover, nay even to gueſs, whether the diſeaſe be venereal *.

But what confeſſion can we expect from a virtuous woman, who is conſcious of no evil intercourſe †? Still leſs from a child, which inherits it from its parent or its nurſe. Beſides, many a one forgets a venereal diſorder that he had many years ago, or does not believe it can have any conſequence after ſo long a time. Perhaps he has requeſted and received immediate and apparent relief of him he conſulted, without underſtanding whether the cure was radical, or

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* Dr. *Bierchen* told me that a youth, twenty years of age, conſulted him. This patient had the left eye-brow relaxed and fallen down, the mouth drawn obliquely towards the right ſide, and the cheeks ſomewhat ſwelled; all which he pretended to ariſe from cold. He likewiſe ſaid that he got affected with this all at once, together with a ſore throat; but that this latter now was better. Mr. *Bierchen* would not have ſuſpected this to be a venereal effect, had he not felt that the glands under the chin were ſwelled and grown together. On looking down his throat he likewiſe obſerved an ulcer in his noſe and on its *ſeptum*. He was now perfectly convinced of the true cauſe. And at laſt the patient confeſſed that he had neglected a gonorrhœa. The Doctor ordered *ſpiritus mercurialis* for him to uſe both internally and externally; by which means the cheek, the mouth, and the eyebrow, came into their places again within a fortnight.

† A virtuous lady ſuffered very much and for a long time by the *fluor albus*, as ſhe herſelf thought it to be. It was accompanied with violent pains in the womb and abdomen; it was of a bad colour, and ſometimes had ſo great a ſtench that ſhe could not converſe in any company. Her conduct had been ſo regular as never to be blamed, or ſhe in the leaſt ſuſpected. Her huſband had an healthy appearance. No lights could be gotten from him reſpecting this affair. At laſt one of her phyſicians found out that her huſband had gone through a mercurial cure the year before. The cauſe was then plain. The phyſician however diſcovered nothing to her; but freed her intirely from all her pains by the mercurial ſpirit of Baron *Van Swieten*.

only

only palliative. In ſuch circumſtances a great deal depends on the ability and induſtry of the phyſician to ſearch into and find out the truth, and accordingly to direct his cure. For let him uſe what remedies he pleaſes, even the choiceſt, it will be to no purpoſe, if he does not diſcover the cauſe, and remove it with mercury.

A gentleman, fifty years old, had already, for ſix years back, begun to grow lean and loſe his ſtrength, but was otherwiſe in a perfect ſtate of health. The learned phyſicians *Stahl* and *Hoffman* had for years together endeavoured to cure him. He went to *Paris*, and during two years uſed the preſcriptions there. At laſt he conſulted the phyſicians of *Montpellier*, and in a courſe of eight months uſed ſeveral of their remedies, but all to no purpoſe. Profeſſor *Fizes* at laſt fell on that ſpeculation, that ſome venereal diſeaſe might lay concealed under this, and, notwithſtanding the patient inſiſted on it that neither he, nor his parents, nor his nurſe, had had any ſuch diſorder, he ordered him to uſe both the milk cure and mercurial ointments at the ſame time; which had ſo good an effect, that his jolly appearance and ſtrength were again reſtored. *Vide* Mr. *Boiſſien De Sauvages Noſol Method.* T. III. P. II. p. 383. An officer, who was ſeverely wounded by a ſhot in the arm, was obliged to have it cut off, when, after being healed, he got affected with convulſions, by which his head was drawn to the right ſide, and his jaw convulſed in ſuch a manner that he was obliged to keep linen between his teeth. Another amputation was made on the ſtump of the arm, but without any benefit. Many other things were tried, but to no purpoſe. At laſt Dr. *Aimar* got notice, that the gentleman had long ago had a venereal complaint, which had been ill managed. He perſuaded him to make uſe of the venereal ointment, by which the diſeaſe was happily cured. *Riverii Obſ.* 10. *Commun.* Aſſeſſor *Strandberg*, in his latter ſpeech before the Royal Academy of Sciences, p. 33. gives an account of a man, who for a long time had been plagued with a *lumbago*, which he at laſt got the better of by the mercurial ointment. He might have been relieved ſooner, if he had

had confeſſed the true cauſe at the beginning. In the ſame ſpeech, p. 32. he mentions a youth, who certainly would have loſt both his ſight and hearing, if he had not been prevailed on at laſt to confeſs that he had been infected with the venereal diſorder.

I have here given theſe inſtances in order to ſhew what injury a patient does to his phyſician, and what hurt he may receive himſelf, in not diſcovering his circumſtances to the perſon he has conſulted, when it is in his power to do ſo. The caſe is different with an innocent mother, and a child. Then a phyſician muſt try every poſſible means to find out the circumſtances of their diſeaſe.

As for a child, ſeldom any certain ſigns will appear on it, unleſs the diſeaſe of the mother began with chancrous ſores. We ſuſpect it however to be infected, if it gets a quantity of pimples in the mouth, accompanied with white ſores appearing as lard, and theſe being eſpecially on the tonſils (*tonſillæ*, *uvula*, *velum palati*) and in the *fauces*; alſo dilating themſelves from one ſpot to another, diſappearing in one place and appearing in another *; and if it has hard or ſwelled glands under the lower jaw, or on the neck, and a ſtinking breath. We likewiſe take notice if it has herpetic eruptions (*dartres*), ſcurf †, any running in the

* Scorbutic ulcers always begin firſt on the gums.

† That ſcurf of children ſometimes is an indication of their parents having been infected with the venereal diſeaſe, and not well cured, I judge from what the phyſician of the admiralty, Dr. *Kaebler*, has told me; that, among 400 children affected with ſcurf, and which were taken care of in the hoſpital of *Naples*, there were 283 whoſe fathers or mothers name ſtood on the liſt of thoſe who had gone through a courſe of mercurial ointment in the venereal hoſpital. It certainly ariſes from a venereal cauſe in ſuch children whoſe parents have not been well cured of the venereal diſorder, or themſelves infected by caps or combs of other children. The cure is likewiſe the ſame as for the venereal diſeaſe. The ſores on the head are ſooneſt healed up by being waſhed with *ſpiritus mercurialis*; but they

the eyes or behind the ears. In that caſe the nurſe is to be ſuſpected. If ſhe then is found to have ſome ſigns of the venereal diſeaſe, it is no longer a matter of doubt that ſhe has infected the child. This we are to diſcover,

1. By inquiries into the nurſe's conduct, either of the clergy in the pariſh, or of her own acquaintance, or of her former maſter or miſtreſs where ſhe has been in ſervice, either in town or country, in publick-houſes or inns? Alſo if any one was infected with the venereal diſorder at the place ſhe lived in before, or if ſhe lived among diſſolute perſons? All which circumſtances are a ground of ſuſpicion. But our apprehenſions will be better founded,

2. If her face and hands have a yellowiſh pale complexion, her eyes being ſunk in her head, with a bluiſh ring under them; and if ſhe grows leaner from day to day: alſo if ſhe is frequently plagued with catarrhs or colds, talking as it were through the noſe, and frequently being hoarſe without any apparent cauſe: if ſhe finds a difficulty in ſwallowing; if ſhe ſpits a great deal, or throws up a quantity of ſtinking and purulent matter; if what ſhe ſwallows returns through the noſe, or is ſhaken up again by a cough; if ſhe has corroding ulcers in the throat of a lardy appearance; if ſhe finds it difficult to inflect her articulation; and if her hair falls off from all parts of the body. Beſides we obſerve,

3. If in the night-time ſhe has a ſound ſleep; or if ſhe then complains of a head-ach, pain in the back and bones, which ceaſe in the day-time; or are leſs violent in the night on lying upon ſomething hard,

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they ſoon return, if no other mercurial remedy is uſed beſides. It would alſo be dangerous to uſe this ſpirit externally only. Thoſe who in their youth have been affected with ſcurf, and not well cured, will often, on growing older, be afflicted with difficult ſcrophulous diſorders, and other ſtrange and often incurable diſeaſes; becauſe the venereal *virus* remains, though altered in its nature.

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as a bench, than in a ſoft and warm bed. It ought alſo to be looked after,

4. Whether ſhe has any tumors in her groins or armpits, under her chin, or behind her ears; if there be any indurations or *exoſtoſes* on her ſkull, arms, or legs; or if in the forehead, and chiefly cloſe to the hair, ſhe is affected with any wet or dry and ſcaly ſores, or ſomething ſimilar to roſes, or rather ſpots of a yellowiſh tinge, reſembling freckles, on her neck, breaſt, and belly; or if on her body be found ſmall creeping ulcers, or larger, in which there is an appearance ſomething like a lump of cheeſe; or if ſhe has deep notches in her hands or under her feet. At laſt is to be examined,

5. Whether ſhe has, on her privy parts, any excreſcences reſembling onions; or if there be any fleſhy warts or chancrous ſores; which latter are either ſmall or large, flat or deep, but commonly circular, their edges being of a pale reddiſh, more or leſs indurated, and ſometimes without any hardneſs at all: the inſide is whitiſh, but, being very corroſive, they appear rather black. They are of quite a different nature from cancerous ulcers. They alſo begin in a quite different manner; firſt ariſing as red ſpots, which itch, but ſuddenly grow painful, theſe ſpots breaking out afterwards as white pimples, which grow flat and then ulcerated: ſometimes they appear as warts, ſuppurating with a whitiſh ulcer: the purulent matter which is diſcharged from theſe ſores looks yellow on the linen. We are likewiſe obliged to know,

6. Whether ſhe is affected with notches round her *anus*, which diſcharge a purulent matter; or if there be excreſcences of various appearance, ſometimes looking like onions, at other times reſembling figs, mulberries, and fringes; being relaxed in ſome perſons, in others again hard and callous.

All the above-enumerated ſigns do not appear in all perſons. One may be affected with a greater, another with a leſſer number of ſymptoms which indicate the diſeaſe to be venereal: for inſtance, thoſe who have ulcers which diſcharge much purulent matter, or who ſpit a quantity of ſlime and matter, are

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at that time ſeldom or not at all plagued with any pains in the night-time.

When a child has inherited the diſeaſe from its parents, it will diſcover itſelf by ſome of the above-mentioned ſymptoms, and by the nipples of the nurſe, which then grow red and ſwelled, as alſo the ring round about them; ſmall bladders break out, fall in, and turn into ulcers: the milk will not flow, notwithſtanding the child is ſucking, becauſe the openings of the nipples are preſſed together by the ſwelling. Beſides, ſuch unhappy children are brought into the world with a very lean and tender conſtitution, they get no reſt during the nights, and are affected with bad eruptions either immediately at their birth or ſome time after.

However we cannot be fully aſſured of the child's ſtate, before we have found out that its parents are infected. There is great reaſon to ſuſpect ſomething of that kind, if the mother has frequently miſcarried, without our being able otherwiſe to account for it; or if ſhe has been brought to bed of living children that have looked very miſerable and half rotten, and ſoon died. We judge of the contagion of the parents by the ſame ſign as we did before concerning that of a nurſe; but, when genteel people are under ſuch circumſtances, it requires ſome prudence and precaution to make the proper inquiries with delicacy.

Venereal ulcers in the mouth are likewiſe called chancrous by phyſicians, which muſt be nicely diſtinguiſhed from cancerous. I now perceive, that they are not ſo eaſily diſtinguiſhed from each other as I thought formerly. The venereal ulcers and indurations, which have taken place on the lips, tongue, or breaſts, and there taken deep root, are eſpecially very difficult to know from the cancerous; unleſs one has had a great deal of experience in theſe ſorts of diſeaſes. It is commonly ſaid that cancerous ulcers bleed a great deal, and the venereal not; but ſome of the venereal ones alſo bleed much at times. The ſcurf bleeds violently, when the cruſts are taken off. All the venereal ulcers which are not of that lardy appearance, but red and dry, bleed likewiſe, eſpecially when the linen ſcraps

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faſtened on it are taken off. All venereal ſores are not lardy; but ſome red, others corroding, blackiſh, and ſphacelous. Theſe latter are often confounded with the cancerous, eſpecially when they fix on other places than the privy parts. It is alſo very difficult to diſtinguiſh them by the callofity in the ulcer and its edges, as the diſtinction depends upon the greater or leſs degree. However, the concluſion will always be, that cancerous ulcers are hard in compariſon with others; and that whoever ſhall be able to know one from the other, with any certainty, muſt have had much experience in treating both. We ſhall often be able to clear up ſome doubts ariſing from this, if we can diſcover the cauſe, by conſidering the circumſtances which have gone before, and thoſe which at preſent appear. This is the more neceſſary towards a cure when the place affected cannot be ſeen; for inſtance, when the ulcer is in the orifice of the womb: ſince, if it be cancerous, it is ſcarce to be cured; but, if it be venereal, there are hopes of curing it with mercury.

A girl, twelve years of age, was carried to *Stockholm*, in hopes to be cured of a ſore in the mouth, which by ſeveral was judged to be a cancer. It was ſomething leſs than a half-crown piece, appeared dirty, and diſcharged a matter: its edges were not hard; but unequal, rough, and elevated. On the outſide of the mouth nothing was to be ſeen but a white tumor, and the glands on the neck and under the ears were much ſwelled. Dr. *Bierchen*, who immediately found that this was not a cancerous but a venereal ulcer, cured her within ſix weeks with a ſolution of *mercurius ſublimatus corroſivus*. From four to ſix grains of the ſublimate were diſſolved in an ounce of ſpirit of wine, and lints dipped in this were applied to the ſore in the mouth, which thereby was healed up, its edges were melted away, and the external tumor diſappeared: afterwards internal medicines, prepared of quickſilver, were given to her, in order intirely to eradicate the venereal contagion. Wherever ſuch ulcers are found on the body, it is quite neceſſary to know how to diſtinguiſh them from cancers. The following

following distinctions were communicated to me by Dr. *Bierchen*, who has acquired great skill and experience in this disease; and who has, to my own knowledge, by these distinctions been able to relieve many whose circumstances have been difficult and equivocal. Cancers appear in two shapes; either corroding, the edges of which are hard and reflected; or growing and spungy (*fungosæ*). The former have a very great hardness, which may be felt, both on the edges and middle. This hardness does not give way to any pressure with the finger, nor is it as if you pressed on any elastic body, but as it were on a stone; which character it has in common with the worst sorts of *scirrhi*. This sort of ulcers are generally circular, being of a dark red colour, with the edges lighter, which are often covered with a skin not ulcerated. The other sort, or the spungy, growing, and luxuriant cancer, looks quite different from the former. One would judge that they were soft by their appearance; nevertheless, on feeling them, they are found hard, though not to that degree as the former: they have no apparent edges, but are puffed out both on the sides and in height, and at the bottom; they are as it were strangulated by the skin below, which however, on having taken away the spunge, is sometimes found to be hard, with an elevated edge in the one or the other place. The appearance of this sort of cancerous sores is dark red and knotty; they mostly discharge a yellow matter, but sometimes only a thin and bad matter (*sanies*), and sometimes a mixture of both.

The yellow matter or *pus* comes from the circumjacent *cellulosa*, which, by the admission of the air and the continual irritation, has been brought to a full suppuration, and mixes its *pus* with the *sanies* of the cancer; for this distemper never gives a yellow *pus*.

The venereal poison frequently lies concealed in a very fat person during his whole life-time; but nevertheless his wife may thereby become infected, and his children get a pitiful inheritance.

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A concealed venereal diſeaſe will commonly ſoon break out and grow ſevere, if the patient thus affected take any ſtrong and unuſual exercise, uſe a great deal of ſtrong liquors, eats coarſe food and eſpecially pork. Therefore we find that this diſeaſe attacks the common people more violently, is more corroſive with them, and very often lethiferous.

In caſe a diſeaſe has been of a long duration, not yielding to all otherwiſe proper remedies, then we have reaſon to ſuſpect ſomething venereal concealed under it; our ſuſpicions increaſe if medicines of quick-ſilver have procured ſome relief. Therefore when I have been unable to tell whether the diſeaſe has been venereal or not, I have preſcribed a little of *ſolutio mercurialis*, which in the former caſe procured a quick relief. The preparation of this ſolution will afterwards be given in this chapter.

A venereal diſeaſe which is the conſequence of an ill cured *gonorrhœa* is in effect more gentle, but more difficult to cure than that which firſt begins with ſhankers; this latter will commonly attack ſooner and with violence, and obliges the patient immediatly to undergo a radical cure.

Whoever has been affected with any external accidents of that kind, and they break out again after ſome time without any other cauſe, may depend upon it that the poiſon is ſtill in the body, though he thought himſelf well cured, and that he ſtill wants a thorough cure.

When a woman of a healthy and jolly appearance, after being married grows lean and ſick, being affected with one unuſual diſtemper after the other, rheumatiſms in the neck, pains and ſwellings in the articulations, or indurations where the glands are, ſtrangury, or a diſagreeable flowing with excoriation and pain near the *meatus urinarius*, then her huſband ought to examine his own conſcience, and immediately confeſs himſelf to an experienced phyſician and aſk his advice. If the huſband then is found to be infected, he ought immediately together with his wife to undergo a thorough cure, and not to defer it from one day to another; as the poiſon in the mean time may affect ſome part neceſſary to life, and either of them or both die.

Scorbutic ulcers differ from thoſe of the venereal kind in the circumference of the former being bluiſh, and ſpotted with ſmall white points. On touching their cruſts they are found ſoft and ſpungy, and in their bottom is generally a ſpungy fleſh, which reſembles a piece of a calf's liver. If it be taken away, it ſoon grows again; powder of burnt allum will ſooneſt remove it. We cannot make any miſtake if other ſymptoms of the ſcurvy accompany it; as for inſtance in the cold ſcurvy, we ſhall find the face pale and puffed up; the patient complains of being tired and out of breath after the leaſt exerciſe; his gums are ſoft and ſpungy and bleed eaſily; ſpots which are red, bluiſh, black, or of a lead colour, are ſcattered on the body, eſpecially on the thighs, but never in the face, the knees grow weak, &c.

In the year 1745, Mr. *Boltenhagen* (now happy) and myſelf went to ſee a new born child which was affected with many ſores on its body of a tardy appearance. The child was continually ſqueaking, and the parents were impatient to have it relieved; the appearance and colour of the ſores made us ſuſpect them to be venereal; nothing certain, but only ſuſpicions could be formed about the ſtate of the parents. In order to clear up this, Mr. *Boltenhagen*, who was a man both of experience and preſence of mind, immediately ſtrewed a little fine pounded *mercurius dulcis* in one of the larger ſores, and covered it with a plaſter, hinting to me, in caſe the ulcer be venereal, this appearance of a lump of cheeſe will melt away by to-morrow; if not venereal, the ulcer will grow worſe. It happened as he foretold, the cheeſe-like lump was melted away, the mother was ſalivated ſuckling her child during the time, and both were ſaved.

New born children are more eaſily cured when they ſuck than when they have left off; nevertheleſs children who are born with the venereal diſeaſe are cured with more difficulty than thoſe who have been infected by the nurſe. The ſooner the diſeaſe breaks out, and its nature is known, with the greater certainty may it be cured; but if it has lain concealed for fifteen or twenty years, it will be difficult to remove. It requires then

ſometimes a continual uſe of mercurial medicines for a whole year, nay ſometimes for two years together, in order to be cured, and beſides a great ſtock of patience both in the ſick and the phyſician.

The venereal diſeaſe is in general curable if it is not ſuffered to grow too inveterate; for the ſhorter time it has been in the body, the more eaſily will it be removed. The cure is more difficult when the bones are already affected.

However this diſeaſe is ſeldom quite eradicated, becauſe the patient grows tired, and breaks off the cure as ſoon as the pains have ceaſed, and the body appears clean. From thence it happens that they get relapſes, or grow indiſpoſed for all their life-time, and for the future affected with ſome ſort of eruptions, eſpecially a *herpes*. Another cauſe is, that young people are not willing to diſcover their bad circumſtances to their parents, and conſequently cannot uſe a thorough cure, being obliged to content themſelves with palliatives till they are quite ruined, and ſometimes incurable. A gentleman had contracted a *herpes* from ſuch a cauſe, againſt which he uſed mercury both in *France* and *Stockholm*. The diſorder cauſed an intolerable itching in the night time, and diſappeared at laſt on a ſudden and unexpectedly, when he cut an iſſue in one of his legs; the *ſolutio mercurialis* was not then in uſe. When the *herpes* ſits on one ſpot only, it may be ſcratched or ſcarified with a pin, and thereby brought to a ſuppuration and healed up as another ulcer.

The oftner a venereal diſeaſe is contracted, the more difficult it will be to remove, and the longer one keeps playing with it by decoctions and ſuch palliatives, the deeper root will it take, and be worſe to cure.

Thoſe who are affected with hard excreſcences (*tophi*) on the head, or ulcers in the throat, ought eſpecially to make haſte to aſk for relief; becauſe in the former caſe the ſcull will ſoon grow carious, even quite through, which eaſily cauſes convulſions and epilepſy. In the latter the face is in danger to become deformed by the falling in of the noſe.

Perſons who are affected with the ſcurvy to any degree will ſuffer a great deal if they uſe mercurial re-

medies before they are cured of that diſeaſe, or at leaſt upon their recovery from it *.

The king's evil or *ſcrophulæ*, if from a venereal cauſe, will yield to mercury if they are not of too long ſtanding, but the cure muſt be continued for a long time. The yellow fever (*icterus*), habitual vomits, *diarrhœa* and convulſions, are curable only by this remedy when they ariſe from ſuch a cauſe. But children who are affected with an epilepſy from the ſame origin, will ſeldom recover. When the poiſon has fixed on the lungs, and already made them ulcerated, no remedy will hardly ever cure it.

Thoſe who are affected with *hypochondria* or the *hyp*, and contract a venereal diſeaſe, will always ſuſpect themſelves to be ſtill infected, though they be ever ſo well cured.

If thoſe who have the venereal diſeaſe, or are not well cured of it, fall into a fever, they will generally loſe their life.

The more the diſeaſe keeps to the ſurface with eruptions and ſores, the leſs pain is felt in the body. Therefore we find a veſicatory to give ſome relief when applied on the place where the pain is fixed; but as ſoon as the ſkin is healed up again, the pain will return equally violent.

I will now advance to the cure itſelf, and firſt mention how to relieve a woman who is found to be infected

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* Dr. *Lind* gives us a remarkable inſtance of this, which he has gotten from Dr. *Grainger*. A ſoldier who had the ſcurvy and venereal diſeaſe at the ſame time, was on an evening anointed with an unguent which contained a drachm of quick-ſilver; this threw him next morning into a ſalivation, which kept increaſing till the tenth day, at which time the inſide of the mouth, the lips, and the cheeks were ſwelled to a ſurpriſing height: he ſpit every day a quantity of ſtinking pieces of the gums; the teeth were for the greater part loſt out of his mouth, and were larger than before; the urine had a bad ſmell, was thick and almoſt black; he fainted frequently, and being in ſuch a wretched condition, could ſcarce be ſaved, nor was he able to do any duty till three months after.

with a venereal diſeaſe during the time ſhe is big with child, which conſequently muſt likewiſe be infected. In ſuch unfortunate circumſtances there is no time to loſe, but a quick relief is required; for if the cure be deferred till ſhe is delivered, the fœtus will in the mean time die, and at laſt be brought into the world half rotten, or with little life. The mother is during that time ſubject to miſcarry, or the contagion may cauſe ſuch tumors, ſchirri, excreſcences, and exoſtoſes, that ſhe cannot be delivered at all, and conſequently either the fœtus or herſelf, or both of them, may loſe their life. Profeſſor *Deydier* has given us an inſtance of this in his Diſſertation *Sur les Maladies Veneriennes*, p. 84, from which is plainly to be ſeen that both the mother and the fœtus would have died if he had not immediately come to their relief with mercurial ointments, by which both were ſaved, notwithſtanding the cure was undertaken ſo late, that it could not be finiſhed ſooner than three weeks before her lying in. Therefore ſuch a patient ought immediately to be well prepared, and with great caution uſe the mercurial ointments. I will afterwards ſhew how the one and the other is to be put in practice. That it can be done without any conſiderable danger, I had myſelf an occaſion to ſee, when a lady on the ſixth month after conception, diſcovered to me that ſhe was infected: the cure being happily performed, ſhe was delivered of a healthy child, and after her huſband had gone through the ſame cure, ſhe has been brought to bed of ſeveral healthy children. *Hildanus* cured in the ſame manner a woman, her fœtus, and another child of hers which ſhe ſuckled during the time. Mr. *Deſault* in his Diſſertation *Sur les Maladies Veneriennes*, and Mr. *Goulard* in his *Oeuvres de Chirurgie*, have ſeveral ſuch caſes, as has alſo Mr. *Faber*.

When a child is born with this diſeaſe, and is ſtill of a tolerable lively appearance, we have hopes to cure it by the mother's uſing the mercurial ointment, and the child ſucking her during the time. If the mother be too weak, we are obliged to procure the child a nurſe who will go through the ſame cure. It is adviſeable to make her acquainted with all the circumſtances be-

fore-hand, in order that the parents may avoid a diſagreeable proſecution, as it once happened in *France*.

But as the mother's or nurſe's breaſt and nipples commonly grow ſo ſore and ſwelled on ſuckling ſuch a child, that the milk will not flow; phyſicians have been obliged to think of another method, which perhaps is the ſafeſt; a goat muſt be well chafed and cleared of hair, and rubbed with the mercurial ointment in the ſame manner as it is done to people; the child muſt live on her milk during the time till it is cured. Mr. *D'Aumont*, profeſſor in *Valence*, cured a child in this manner within thirty-five days, and Mr. *Lewret* is ſaid to have cured ſeveral in this manner.

The ſame cure may likewiſe be uſed for a child which already is weaned; but if it be advanced to its tenth or twelfth year, it can then under great precaution and ſuperinſpection uſe the mercurial ointment in the ſame manner as a full grown perſon; or we may preſcribe for it *Syrupus Mercurialis Plenckii*, a tea ſpoonful at a time once or twice a day. We ſhall ſpeak more of this afterwards, and its preparation eſpecially when intended for children *.

I know

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* The preparation of this ſyrup is as follows: Take purified quick-ſilver half a drachm, *gummi arabicum* one drachm and a half; put to it *aqua fumariæ* a ſpoonful: rub it in a ſtrong mortar for a long time till the little globules of mercury intirely diſappear; add to this ſyrup of violets four ſpoonfuls, and elder water one ſpoonful. Inſtead of the latter, *ſolutio mercurialis* would make it more efficacious. Aſſeſſor *Bierchen* uſes inſtead of this a very palatable mixture of ſublimate with quick-ſilver, prepared in the manner as follows: Two drachms of diſtilled quick-ſilver muſt be rubbed in a ſtone mortar, together with ſix grains of *mercurius ſublimatus*; add to this ten or twelve drachms of the powder of *gummi arabicum*; pour on this by degrees eight ounces of clean ſpring water, continually rubbing it very well with the former during the time; at laſt mix to it two ounces of *altheæ ſyrup.* and two ounces of cinnamon water, which latter according to the circum-

ſtances

I know very well that the generality chuſe rather to employ *mercurius dulcis*, *panacea mercurialis*, and ſuch ſimilar remedies of quick-ſilver prepared by a mineral acid; I likewiſe believe ſeveral to have been cured by them. But to my knowlege thoſe remedies cauſe very often violent pains in the ſtomach, ſevere *diarrhœas*, and a dreadful ſpitting, which have made the cure both dangerous and frequently ineffectual. I know that ſuch remedies ſooner ſhew their effect by the abatement of the ſymptoms, and for that reaſon only the concluſion is immediately made, that on account of the ſalivation they cauſe, they are preferable to the mercurial ointments which I often recommended, and which in fact are much ſafer and better, requiring only a little more time. For this is confirmed by daily experience and the obſervations of ſeveral phyſicians, which ſhew many relapſes to follow after the uſe of the former, and that ſeveral perſons who have repeated the ſalivation without any effect, at laſt recovered a perfect health by a long uſe of the mercurial ointments. If the ſalivation could be prevented when the *panacea* and *calomel* are uſed as long as the ointments, I believe it would equally cure. However, *calomel* may be taken in a pretty large quantity without cauſing any ſpitting, provided it be combined with *ſulphur auratum* and camphire; perhaps in that caſe it is of the ſame ſervice as the ointments. For I know that Aſſeſſor *Bierchen* with this radically cured a young gentleman who was affected with the *fluxus hepaticus* of a long duration, ariſing from a venereal cauſe. The ointments were firſt tried; but the Doctor was obliged to leave them off, as they immediately threw the patient into a ſalivation. He likewiſe cured another without any ſpitting, by the uſe of this compoſition and the mercurial ointments together.

ſtances may be prepared with or without ſpirit. For thoſe who are nice in the taſte, we may order diſtilled water of roſes inſtead of the ſpring water. The mixture keeps better with a diſtilled water than with the common.

The ſame caſe exiſts with the fumigating of cinnabar as with the *mercurius dulcis* as above. It is true that an external accident, as, for inſtance, hard knots, or a difficult calloſity, may be removed thereby, when the ſmoak, by means of a funnel, is directed to that part of the body which is affected. But a right venereal diſeaſe cannot be cured thereby with any ſafety and certainty. This is ſufficiently proved by the journals which are purpoſely kept of ſuch cures, and which the learned *Aſtruc* amply relates in his great work on venereal diſeaſes, p. 181—208.

Salivation is much in uſe with us, but I wiſh that it were intirely rejected: for, 1. It is very painful. 2. Very dangerous. 3. Uncertain. 4. Inconvenient to many. 5. It has no criſis. 6. Not neceſſary.

That it is attended with great pains is eaſily found when we conſider that a perſon who ſalivates firſt feels a great heat in his mouth, the glands on the neck and the mouth ſwell, the gums grow ulcerated, as likewiſe the tongue; the whole face ſwells, and the tongue ſometimes to ſuch an enormous ſize that it has not room enough in the mouth, but is in part driven out of the jaws, and when the patient happens to get a little reſt he ſometimes will ſqueeze it by contracting his mouth while aſleep, and cauſe great pain. Therefore one is obliged to put ſomething betwixt the laſt grinders, in order to prevent the mouth being ſhut. If he has heretofore loſt a tooth, a part of the tongue will be preſſed in there, and cauſe great pain: therefore ſuch a place ought to be filled up with a piece of cork. When he ſpeaks he rubs the ulcerated tongue againſt his teeth, which is very painful. The ſame happens if he drinks a little milk-warm broth. The evil is made worſe by his being obliged to ſpit every moment, which likewiſe prevents him from ſleeping. If he ſhould fall aſleep, one is often obliged to awake him, as otherwiſe he might eaſily be choaked by the great flow of his thick and tenacious ſpittle, eſpecially if he ſleeps on his back; beſides which the teeth looſen and partly tumble out; and the patient is exhauſted and grows lean without neceſſity or benefit. All this is likewiſe allowed by Mr. *Faber*. Compare *Van Swieten*'s Comment,

ment. I. § 135. It would however be ſome comfort, if this ſtrong ſpitting, with all the other plagues attending it, did not come on before the latter end of the cure; for then he might hope to be cured at once: but if the ſalivation comes on, as it ſometimes does, after the third or fourth ointment, the quickſilver will run off, and the ſick fall ill again after a while, and be obliged to undergo a new cure.

Nobody can deny but that the ſalivation is attended with danger. Do not fevers, and ſometimes a diarrhœa, bloody-flux, ſpitting of blood, or other hæmorrhage, attend it? Frequently, after the cure is performed, and the ulcers in the mouth are healed up, the under jaw cannot be opened. The *French* call it *bridure*. Not to mention that the tongue is afterwards often found grown faſt to the gums, and other accidents, which ought to terrify every one from uſing ſuch a cure. I know very well that nobody at preſent will carry the ſpitting ſo far. But how are we able always to keep it within proper bounds, after it has once burſt out?

That a ſtrong ſalivation does not ſecure the patient from a relapſe, is known by experience and proved by good reaſons; for it is found, by experiments purpoſely made, that quickſilver ſoon goes off, and that the greateſt part of it may be collected again in the veſſel the patient has been ſpitting in; the reſt is carried off with the urine, ſtools, and perſpiration. And therefore it is obſerved likewiſe, that a gold head of a cane grows pale by being kept in the hand of a ſalivant for half an hour in the beginning of a cure, but not ſo at the latter end; and that a ducat does not alter its colour when put into the ſpittle itſelf during the middle and the following days of the cure; for the quickſilver is then already out of the body. That the ſpitting continues nevertheleſs, ariſes from the irritation which the ulcers in the mouth cauſe. Beſides, the greater part of the mercury goes to the mouth, and conſequently too little a portion is left to ſubdue the contagion which revels in the lower part of the body. It is alſo known, that when a ſtrong ſalivation ſhall be effected, the unctions muſt be more frequent,

which

which always cauſes a fever. During this the ſmaller veſſels will be contracted, which prevents the quick-ſilver from entering them; and conſequently the contagion lying in theſe parts will not come in contact with, or be touched at all by, the mercury, but is left to kindle the diſeaſe again.

Every ſenſible perſon will allow that the ſalivation cannot eaſily be uſed for a woman with child, for a tender child, for a perſon who has weak lungs, or ſenſible nerves, or is already lean and exhauſted; nor when the glands of his neck are much ſwelled, his throat and noſe affected with ulcers, nor if he be ſubject to convulſions or epilepſy. All ſuch however are cured with the ointments ſo directed that they do not cauſe ſalivation. Why then ſhould not others be allowed to uſe the ſame benefit?

That the ſalivation has no criſis I conclude partly from this, that no genuine venereal diſeaſe has ever been cured by a ſalivation excited by nature; partly from experiments, that healthy people, anointed in the ſame manner as ſick, have fallen into a ſimilar ſalivation, attended with the ſame ſtench and pains. We never require any criſis when we give bark for an intermittent fever, chalybeat wine for a weak ſtomach, or ſcurvygraſs (*cochlearia*), and ſorrel (*rumex acetoſa*), for the ſcurvy.

Beſides, why ſhould we put any one to an unneceſſary ſalivation, when we know that many have been cured in whom no ſpitting at all could be excited? Since the year 1718 innumerable perſons have been radically cured without ſalivation: and experience ſhews that thoſe have not ſuffered any thing during the cure, nor been attacked by any dangerous accidents, neither enervated; but, on the contrary, got a jolly appearance during the cure, and afterwards been ſafe from relapſes. The only inconvenience is, that they have been obliged to confine themſelves to convenient food, and that with moderation; but they may walk round the room, and enjoy the company of their friends. Mr. *Chicoyneau*, who was profeſſor at *Montpellier*, and afterwards firſt phyſician to the king of *France*, chiefly eſtabliſhed the uſe of this gentle method

method of curing the venereal diſeaſe in the year 1718. Mr. *Haguenot*, profeſſor in the ſame place, has ſince that, in 1732, made it more applicable to all circumſtances. It is now probably received every where, as the ſick are equally well cured in this manner at *Montpelier*, *Paris*, and *London*; as alſo in *Sweden*; only with this difference, that a little longer preparation is required before the cure; and that the patient cannot venture to expoſe himſelf ſo ſoon to the open air after he is cured; which is owing to our climate *.

A radical cure depends on the following circumſtances †: 1. That ſo much quickſilver enters the body as is wanted to deſtroy the poiſon. 2. That it run through all even the ſmalleſt veſſels in our body. 3. That it touch and come in contact with every drop of blood and juices in the body. And, 4. That this happen not only once but ſeveral times.

Therefore the quickſilver ought to remain for ſome time in the body, to be carried every where; and not immediately to be evacuated, as happens when it is combined with purges, it then only running through the guts. It ought neither to be expelled by a ſudorific decoction, nor by ſalivation, as it then runs haſtily off with the ſpittle. For that reaſon,

1. A ſufficient quantity of the mercurial unguent ought to be rubbed in; which quantity cannot be aſcertained, becauſe it ſhould vary according to the age of the ſick, their growth, ſize, and other circumſtances: about ſeven, eight, or nine ounces are generally expended. The longer the interval between each unction the leſs unguent is required, and the better and ſafer will the cure be. Mr. *Raymond* in this manner

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* This is practicable however in the ſummer time, even during the cure, and the ſalivation thereby prevented in a great meaſure: witneſs Dr. *Hallman* and Aſſeſſor *Bierchen*.

† It is very pleaſing to me to find that this is likewiſe approved by Mr. *Plenck*: ſee his *Methodus Nova & Facilis Argentum-vivum exhibendi*, p. 49.

cured

cured his patient, who had a hole in his ſkull from a venereal cauſe. After the application of five ounces of mercurial unguent the hole was filled up, and all well in eight months, the time of preparation included. But when he before tried to accelerate the cure, his life was endangered by convulſions: ſee *Traité des Maladies, qu'il eſt dangereux de guerir*, p. 303. Now if a perſon, who has contracted the diſeaſe, requires eight months time to cure it, is it then a wonder that any one, who has it by inheritance, ſhould require three or four times as much. This is the reaſon that ſo many are left uncured, only through impatience, and employment of too ſhort a time. The late Mr. *Aſtruc* cured two that were miſerably ſick by ſlow unctions and without a ſalivation. The one had been twice ſalivated, and the other uſed the ſudorific cure with guaiacum to no effect. The one was at laſt cured within ſix months by being anointed every fifth, ſixth, or ſeventh day; the other, being leſs affected, was cured within three months.

2. A little only ought to be rubbed in at each time, for inſtance, one drachm and a half, or two drachms. And,

3. The ointment ought not to be haſtened, but left off as many days as are neceſſary to prevent any ſpitting. Therefore the anointing is to be deferred as ſoon as the patient begins to feel a heat in the mouth, or his gums grow red and ſwell. One may certainly know by this that the quickſilver is in the blood

4. The body ought for ſome time to be well prepared, in order that the quickſilver may cauſe no trouble in it, nor immediately run to the mouth, but remain for ſome time in the body, and go off ſlowly and by degrees through the ſkin, by the kidneys and the ſtools, *&c.*

The preparation is almoſt the moſt neceſſary part of the whole cure; to which a longer or ſhorter time is required, according to the circumſtances of the patient. How bad a conſequence too ſhort a preparation may be attended with appears from a caſe in the above-mentioned ſpeech of Dr. *Strandberg*, p. 18. How well the cure afterwards ſucceeded, after a previous and long

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preparation, may be ſeen in the ſame place. Each perſon may require a different preparation, according as the conſtitutions differ; but in geneneral it conſiſts in bleeding, more or leſs, according to the plethoric habit: ſee p. 87. Next day ſome gentle purge muſt be taken, which may be repeated after a day or two, if there is reaſon to believe that the ſtomach and bowels want more cleanſing. Beſides which the patient ought to drink freely, either of whey diluted with water, or water mixed with one fourth or fifth of milk, or barley-water with milk, or ſome ptiſan prepared of well-waſhed corn, or of the roots of *ſcorzonera*, *cichoreum*, *gramen*, or *taraxacum*, boiled in water; to which, after being taken off the fire, may be added ſome liquorice ſo as to make it palatable. When cool, paſs it through a ſtrainer, and let it be drank either as it is, or mixed with a little milk *. As to the food, the patient ought to be very nice, and neither eat too much, nor ſuch things as will cauſe a heat in the blood, or make it acrid. However, one of the moſt neceſſary points of the preparation are milk-warm baths, which one ought to begin with the day after having taken the phyſic, and are to be uſed once or twice a day, according to the ſtrength of the patient, for inſtance, in the morning, and at ſix o'clock in the evening.

The longer a patient can bear to ſit in the bath, the better it is, eſpecially for thoſe who have a lean and dry conſtitution; but a woman big with child ought not to venture into the bath, for fear of miſcarrying. At *Montpellier*, in the hoſpital for venereal diſeaſes, they commonly uſe to bathe eighteen times; but the number of baths cannot be fixed: one patient wants more, another leſs. After each bath he ought to drink weak broth, or ſtrained barley-broth. When

* Formerly it was cuſtomary to let the patients drink decoctions of guaiacum and ſaſſafras, and the like, during the preparation or the cure itſelf. But this cuſtom is now corrected. The intention of preparation is to dilute the blood, and to relax the ſolid parts; but not dry them up.

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he leaves off the uſe of the baths, it ought to be well conſidered whether another bleeding is required; though this is ſeldom neceſſary with us; but to take another purge is generally of advantage.

It frequently happens that we get ſuch patients under our charge, whoſe circumſtances or hideous pains will not allow ſo long a preparation; namely, thoſe who are already ſo weak that they can ſcarce hold out any longer; whoſe ulcers in the throat threaten with the loſs of the noſe, the bones of which already begin to be affected; whoſe breath gives ſome occaſion to fear ulcers in the lungs, *&c.* With ſuch perſons any delay will be dangerous. In ſuch circumſtances one may follow profeſſor *Haguenot*'s advice, and, after one or two days preparation, anoint and bathe the patient alternately, till the violence of the diſeaſe be tolerably ſubdued; which is ſoon done: then, leaving off the ointments for a little while, the preparation is undertaken in food, drink, and eſpecially with many baths, juſt as is before mentioned, and as if no unguent had been applied beforehand: the ointment is undertaken again, after a proper preparation, and continued till the diſeaſe is quite cured *.

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* Mr. *Goulard*, l. c. p. 26. did in this manner ſave the life of a gentleman who in his youth had contracted ſeveral venereal diſorders, which he had only appeaſed with palliatives. He ſought relief in *Holland*, but to no purpoſe. He travelled to *Paris* in order to get cured there, eſpecially of a tumor on the uppermoſt part of the breaſt, where the *clavicula* unites with the *acromion*. A plaſter was applied: the tumor ſuppurated, pieces of the *clavicula* fell out, and the ſore was healed up. But he uſed nothing that could extirpate the venereal poiſon in his blood. He went home again, thinking all was well: but was attacked by one diſtemper after another; as cold fevers, bleeding of the noſe, diarrhœas, pimples ſcattered in the body, *exoſtoſes* on the ſkull, and contracted a ſcurvy beſides. At laſt he took ſhipping for *Montpellier*. Mr. *Goulard* was ſtruck when he ſaw him: for he was amazingly lean and pale, affected with a tertian fever, and beſides with a ſevere pain in all his

The food, during the cure, ought to be moderate, and well choſen. Salt, ſour, ſmoked, fat, and hard food, ought not to be eaten. Spices are likewiſe improper. Milk, and its preparations, barley-broths, with bread and barley-gruel, are very ſuitable. Eggs, ſoft-boiled, are to be eaten at times. Spinage ſtewed or made into pudding, or bread-pudding, may likewiſe be eaten. Thoſe who are weak, or of a cold conſtitution, or have had ſtrong evacuations, may, at dinner-time, eat ſome weak veal or chicken broth, a little ſteak or hachee of fleſh. Wine ought intirely to be left off, except he ſhould be diſpoſed to a diarrhœa; for in that caſe it is of ſervice; and then he muſt avoid prunes, cherries, plums, baked apples, preparations of it, and other fruits. On the contrary, ſuch things are neceſſary to thoſe who are obſtructed: for without regular ſtools it is impoſſible to keep the mercury from the mouth.

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his articulations. His pimples and *exoſtoſes* were likewiſe painful. When the fever was cured, a ſtrong bleeding of the noſe troubled him, and, when that ſtopped, the fever returned; from which being again relieved, an enervating diarrhœa affected him, which alſo was conquered. As all this was an effect of the venereal poiſon, and his ſtrength was too much gone, it was impoſſible to think of uſing the cuſtomary preparation and mercurial ointment. Although the patient was only thirty-four years old, had good lungs, and ſtill ſome hopes. Mr. *Goulard* undertook profeſſor *Haguenot*'s method, brought the ſick into the bath, where he could hold out no longer than a quarter of an hour. After that he was anointed with an unguent which contained one third of quickſilver. Theſe two remedies were uſed alternately, ſo that within fifteen days he had uſed the bath as many times, and the unguent ten times. During all this time he was allowed to eat broths with antiſcorbutic herbs. In this manner the venereal poiſon was ſo far ſubdued that the patient was able to take a little purge of manna, and afterwards uſe forty-five baths, in which he ſometimes could ſit for a whole hour together. After having uſed them, he was rubbed with the mercurial ointment fifteen times in forty-five days, and thereby regained his health and former ſtrength.

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The ſigns of an imminent ſpitting are not only heat in the mouth, red and ſwelled gums, but likewiſe obſtipation of the *alvus*, diminiſhing of urine, which alſo grows reddiſh, and an unuſual propenſity to ſleep. Therefore we are obliged to preſcribe for ſuch, alternately, manna or caſſia, and clyſters, ordering them to drink freely of ſome proper drink already mentioned.

The compoſition of the mercurial unguent is as follows: Take of purified quickſilver ſix ounces, and of hogs-lard ſix ounces: let the quickſilver be firſt rubbed with a little turpentine till the globules of it cannot be ſeen, and afterwards mix it with the hogs-lard. The pounding and mixing ought to be done with great attention and labour *. Three days are certainly required to do it well. The quickſilver ought to be firſt exceedingly well purified, which is done by rubbing it in a ſtone mortar with a wooden peſtle, and waſhing it (if I may ſo ſay) with as much water as will cover it. The water, which grows dirty, ought to be poured off, together with a black or a blackiſh-brown powder which is then ſeparated from the quickſilver. This waſhing is to be repeated in the ſame manner, till the water grows no more dirty, and no blackiſh powder is ſeparated. The hogs-lard

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* This is of the utmoſt neceſſity; for the quickſilver will by this means be better divided and combined with the lard, ſo that it cannot run together in the blood and ſalival glands. If the unguent is ſtill a dark blue, it ſignifies that it is not ſufficiently worked, and will ſoon cauſe ſpitting: but the light blue not ſo. Mr. *Petit* made his of a quickſilver which was diſtilled from cinnabar: for inſtance: With a pound of this was mixed a little ſpirit of turpentine in a marble mortar; to which was added fat (not ſalted); all which were worked together for two or three days afterwards: then he put to it four ounces of melted lard, and cauſed it to be well worked in with the former. It will perhaps be indifferent which of theſe unguents we chuſe; only we muſt remember, that this contains equal parts of quickſilver and fat; but in the former the quickſilver makes only a third part. We direct the uſe according to that.

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ought not to be melted, but cut into ſmall ſlices and cleanſed from its ſmall membranes and threads. If the unguent be not well worked, ſo that the quick-ſilver may be equally diſperſed through every part thereof, then we are deceived with it; for the quick-ſilver will ſink to the bottom of the pot, eſpecially during the warm ſeaſon.

Now, in order to go to work with the ointment, clean thread ſtockings ought to be kept in readineſs, and the room moderately warm; then, having inſpected the gums and the inſide of the mouth, that it may be known in the ſequel whether they grow affected by the cure, the patient is placed by the fire-ſide, except when the ſummer heat is very ſtrong. If he cannot anoint himſelf, it muſt be done by another perſon; who, having put on a glove, warms it well before the fire, and rubs the part which is to be anointed till the ſkin begins to grow a little reddiſh; then, according to the age or circumſtances of the patient, he takes a drachm and a half, or two drachms, of the unguent, and rubs it in firſt on the left foot and over the whole leg. The next two or three following days nothing is to be done. After that we anoint the right foot and leg in the ſame manner. The third time the left thigh, and the fourth time the other. If nothing be found that anounces a ſalivation, then we may proceed to anoint for the fifth time, on the groins and limbs, and the ſixth the whole back. The ſeventh friction is performed all over one of the arms, and the eighth on the other. Afterwards it is begun again in the ſame order and on the ſame places as before, till the perſon who directs the cure thinks it ſufficient.

As the perſpirable matter is the moſt copious of all evacuations, and conſequently can make the greateſt derivation from the mouth, it would be beſt to clean the part every day after it has been anointed; which may be done by waſhing off the little unguent remaining on the ſkin with ſome ſoap, brandy, and water: this will open the pores in order to promote perſpiration and facilitate the entering of the quickſilver when the part is to be anointed again. To order

them baths at that time would debilitate too much perhaps, especially those whose stomachs and constitutions are weak. Therefore those who use the ointments in the summer time come more easily off, by taking gentle exercise abroad when convenient, the air being then warm.

One ought to anoint more that part or those parts which have suffered most during the disease, especially where any *exostoses* have been, or some pain is still remaining. We omit a day or two between each anointing, especially as to children, women big with child, and weak persons. The patient ought to lie down between sheets for an hour or an hour and half after each unction. The number of unctions can never be fixed; but they may be left off when the disease and the symptoms which are curable have ceased *. Or, that I may be the more explicit, when

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* Old *exostoses*, neglected and much indurated tumours in the groins, and what we call a herpes (*dartres*) will not always yield to this cure. But now they can do no more mischief. External ulcers are sooner healed up by dipping lint in the *spiritus mercurialis* and applying it to them. If the ulcers are very sordid, one may make this stronger. Assessor *Bierchen*, who probably first began with the stronger solution in this manner, takes commonly four grains of the *mercurius sublimatus* to one ounce of *spiritus vini*. But the ulcers are sometimes very sensible; a remarkable instance of which is given by the late Dr. *Goisard*. In that case they may be anointed with fresh butter (not salted) or unguent made of cream, till the mercurial frictions from the inside have had time to make some alteration. Venereal eruptions will likewise sooner give way to a washing of the above-mentioned spirit diluted with warm water. *Porri venerii* may be taken away either by ligatures, or cut off by scissars, in case they do not fall off by the cure. To cure *exostoses* we assist by smoaking them with cinnabar, in case it should appear necessary. More of this may be read in Mr. *Astruc*, and *Faber*, *lib. cit.* But it is a matter of importance not to leave any shanker, which would propagate the contagion again. The experienced *Hildanus* has already, in the year 1589, made this necessary observation, and proved it by cases.

the

the phyſician conſiders the time, the unguent employed, the duration and degree of the diſeaſe, and the diſappearing of the ſymptoms, and by that judges that no more is wanted, eſpecially if the cure has not been attended with ſpitting or a *diarrhœa*, one may then begin to waſh one's ſelf clean with ſoap, a little brandy, and warm water; and purge two or three times; but taking care not to expoſe one's ſelf too ſoon to the air. A patient went out too early in the open air, with a thin ſilk waiſtcoat on, and thereby contracted a violent colick which had nearly killed him. Alſo a patient of Mr. *Petit* eat a quantity of cakes ſtily, immediately after the cure was finiſhed, and thereby loſt his life. Mr. *Faber* mentions one who got a dyſentery by eating too many raiſins, and had but a narrow eſcape.

Some conſtitutions are of ſuch a nature that the quickſilver immediately proceeds towards the mouth: therefore we ſhould never neglect to take notice of the patient's mouth at each unction. If we perceive that a ſpitting will enſue, we do not undertake another unction before we can make ourſelves ſure again, and afterwards leave a greater interval of time between each unction. If it ſhould break out to a ſalivation, though it ſeldom happens, the patient ought immediately to ſhift his ſtockings, linen, and ſheets; and what is ſtill remaining of the unguent on the ſkin muſt be waſhed off; a gentle purge or two muſt be taken; and, in caſe the pulſe is ſtrong and high, he muſt be bled. In *Montpellier*, tepid baths are uſed immediately. An increaſed perſpiration makes a diverſion from the mouth and inteſtines. If others in the ſame room uſe the mercurial cure, the patient ought to go into another; becauſe in the former the air is full of vapours and exhalations of quickſilver, which may be abſorbed in the body by the mouth, the breath, and the pores of the ſkin: thence it happens that in ſuch rooms many a one has fallen into a ſalivation without having been anointed a ſingle time.

I will alſo mention another and more commodious way of curing the venereal diſeaſe, as I find it likewiſe to have ſucceeded well in *England*, and alſo that

it was practiſed with ſucceſs in the *French* army during the laſt war. Dr. *Locker*, in his practical obſervations, tells us, that with this remedy he has cured 4880 perſons in the hoſpitals of *Vienna*. Dr. *Gardane* * has ſhewn, in the plaineſt manner, the innocence and great efficacy of this remedy, and proved what he has advanced by ſeveral obſervations †. As to this remedy, I myſelf have not had much experience, as I have ſeldom had opportunities of trying it. I muſt confeſs however that all thoſe I have ordered it for, were very well cured by it. A patient is ſure enough, I ſhould ſuppoſe, not to fall ill again after this, provided he continues the cure for ſome time: at leaſt I know ſome poor people, whom I cured long ago with it, who are ſtill in good health. No other preparation is here required than a purge or two; unleſs a bleeding, which will be neceſſary eſpecially if the patient is plethoric, ſtill has ſtrength, and the ſymptoms are inflammatory; ſome warm baths will likewiſe be of ſervice, in caſe he is of a very lean and dry conſtitution. We have now learnt by experience that every one may attend upon and perform his own buſineſs during the uſe of this remedy. Young children may likewiſe uſe this remedy, when prepared without brandy. It is more critical with women who are big with child; for, as it promotes their menſtrua, it may cauſe them to miſcarry, if they have not been bled ſufficiently. I have heretofore been of opinion that this would not agree with thoſe who have weak lungs, but ſeveral experiments have ſhewn that apprehenſion to be without any foundation.

Baron *Van Swieten* ought at leaſt to have the honour of firſt bringing this remedy into common uſe. He had it prepared as follows:

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* In his *Recherches Pratiques*, printed at *Paris*, 1770.

† Mr. *Faber* himſelf, who is ſo great an advocate for ſalivation, confeſſes nevertheleſs that this, prepared after the method of Baron *Van Swieten*, is the moſt efficacious remedy againſt a venereal herpes. See l. c. p. 410.

℞ *Mercurii ſublimat. corroſ. in pulv. ſubtiliſſ. redacti - - gr.* xxiv.
Spirit. ardent. e frumento ℔iv.
Digere, ſubinde agitando donec mercurius ſolutus fuerit detur ad lagenas vitreas.

This was called *ſpiritus mercurialis* in our ſhops. We were not backward to try it in *Sweden*, eſpecially I prevailed on the late Aſſeſſor *Elf* to uſe it in the hoſpital at *Stockholm*. But we ſoon found that the taſte was inſupportable, ſo that the ſick could not continue with it. Therefore we pounded *mercurius ſublimatus corroſivus* very fine in a glaſs mortar, and diſſolved it in clear ſpring water *. This was effected by taking ſix, eight, or twelve grains of the above ſublimate according to the ſenſibility of the conſtitution of the patient, mixing it firſt in the mortar with a little water, and, when it was diſſolved, pouring it into a vial, adding a quart of water to it: it was then filtered through blotting-paper, and a little ſyrup of raſpberries added, ſhaking the vial very well. This got the name of *ſolutio mercurialis* in our ſhops. Of this we gave to the ſick, on the firſt days, morning and evening, half a ſpoonful at once in a tea-diſh filled up with the common drink of the patient; which being taken, he was to drink, after that, thin oatmeal-broth, barley-water, rice-water, toaſt and water, or chicken-broth. I let them generally drink a ptiſan of ſarſaparilla root, diluted with milk. I find that Mr. *Gardan* orders milk to be drunk after it by thoſe who can bear it, and are much weakened: to ſome he gives it in chocolate. The drink uſed after the remedy ought to be drunk in quantity, for thereby gripes are immediately relieved, in caſe they ariſe from the medicine. If it cauſes diſguſt or reachings, it may be prevented by diſſolving the mercury in four or five ounces of good brandy, and filling the reſt with water. The ſtomach has its

* Mr. *Gardan* rubs the *mercurius ſubl. corroſ.* with as much *ſal amoniacum*, and diſſolves it in diſtilled water. See l. c. p. 268 and 269.

various caprices, and a phyſician is obliged to comply with them.

When we have in this manner for a couple of days accuſtomed the ſtomach to this remedy, we then can give a ſpoonful morning and night. At laſt when the medicine does not at all affect, one may increaſe the doſe on giving one ſpoonful in the morning, one towards noon, and one in the evening. In this manner we continue not only till the patient ſeems to be recovered, and the external ſymptoms diſappear, but likewiſe for ſome time after: in fine, if for inſtance ſixteen or twenty grains have been required to abate the ſigns of the diſeaſe, we prevail upon him to continue till as much more is taken, in order that he may be ſure not to fall ill again. Confer Mr. *Gardan*, ch. i. p. 112. It is true that we cannot eaſily perſuade the patient to uſe any thing, after he finds himſelf well, but we ought to tell him frankly, that he otherwiſe is by no means ſecure. We ought before-hand to make this agreement with him, and not undertake the cure before he promiſes entirely to comply with the preſcription.

The ſame food is convenient in this cure as in the former. A purge ought to be taken once or twice a week; manna or *pulpa caſſiæ* are moſt proper. To poor people one may give the root of jalap well rubbed with a little ſugar; for it is confirmed by experience that the cure then ſucceeds better. There is no fear of any ſpitting if we direct the cure with prudence in the above manner, for this remedy itſelf promotes the perſpiration and urine; the quantity drunk likewiſe increaſes theſe evacuations, and the phyſic procures ſtools. When theſe three evacuations ſubſiſt, hardly any ſpitting can enſue; but if by the above-mentioned ſigns we find any appearance of its coming on, then one muſt leave off the ſolution for ſome days, drink more, and take phyſic once or twice. In the warmer countries the ſick may walk in the open air on ſuch days when the weather is fine and warm. They may uſe the ſame liberty in our country in the middle of the day during the ſummer ſeaſon. The ſooner the ſymptoms decreaſe and diſappear, ſo much the better it is; if it goes but ſlowly, we increaſe the doſe.

Of

Of the ſeveral remedies already mentioned with which tender children may conveniently be cured, I think the *ſolutio mercurialis* to be the ſureſt and moſt eaſy of all. The difference in the preparation when intended for them is, that we only take ſix grains of *mercurius ſublimatus* inſtead of twelve; we give it in milk, and likewiſe order the ſame to be drunk afterwards. A doſe in the beginning is only half a tea ſpoonful morning and night; afterwards we give a tea ſpoonful twice a day. The child ought likewiſe to purge once or twice a week; one ought frequently to look after it, if any ſlime is derived to the child's throat; in that caſe, in order that the child may not thereby be ſuffocated, we endeavour to get the ſlime away by purges and injections, or by ſome other thing that anſwers the ſame purpoſe. This is alſo a neceſſary obſervation of Mr. *Gardan*, ch. i. p. 139.

Theſe two methods to cure the venereal diſeaſe, are the beſt hitherto found out; but a ſtill more efficacious one will be to combine them both, ſo that if the diſeaſe is inveterate, a patient uſes the mercurial ointments, and *ſolutio mercurialis*, during the ſame time *. The patient muſt be well prepared by diet, bleeding, purges and baths; then he begins with the *ſolutio mercurialis*, aſſiſting its operation with frictions of the *unguentum mercuriale*; however what remains of this on the ſkin, muſt be waſhed off with ſoap, water, and a little brandy, each day following after an ointment. We likewiſe mind as above mentioned, that neither ſpitting nor *diarrhœa* may enſue; alſo if the patient has the ſcurvy, we give remedies againſt that before or during the mercurial cure. Frequently it will happen that *exoſtoſes*, *caries*, pain in the bones, and indurated tumors eſpecially in the groins, will baffle the ointments; but they diſappear when the *ſolutio mercurialis* comes to their aſſiſtance. Alſo we find that venereal tetters ſometimes do not yield to the *ſolutio mercurialis*, but they muſt however give way on combining the uſe of ointments to the former remedy.

* Profeſſor *Von Schulzenheim* and Aſſeſſor *Bierchen* have on ſuch occaſions already, ſome years ago, combined both the methods; Mr. *Gardan* calls it *Traitement Mixte*.

Phyſicians employ ſtill other methods to cure this diſeaſe. I will only mention a part of them. Mr. *Plenck* in *Vienna* combines purified quick-ſilver with *gum arabic*. This is brought about by means of a tedious and long rubbing, mixing with it by degrees *aqua fumaria* and *ſyrupus kermeſinus*, or he makes pills of it by adding *extractum conii* and *pulvis liquiritiæ*. More *gum arabic* than what Mr. *Plenck* preſcribes, is wanted in order to ſuſpend the quick-ſilver, otherwiſe it falls to the bottom of the vial after a little while under the appearance of a grey powder, mixed with viſible particles of quick-ſilver. This remedy operates rather ſlowly, therefore Mr. *Gardan*, ch. i. adviſes to mix a quart of this ſolution with ſeven or eight ounces of pure water, in which have been previouſly diſſolved four grains of *mercurius ſublimatus corroſivus*; it may be uſed in the ſame manner as the *ſolutio mercurialis*.

Dr. *Gervaiſe* takes as much quick-ſilver as he intends for one doſe, mixes it with ſome ſyrup in a ſpoon, and thinks thereby to gain the ſame point.

Others mix quick-ſilver with honey. Mr. *Nicole* mixes it with a paſte of which he makes biſcuits; the fermentation which from thence ariſes, may perhaps make the quick-ſilver more active. *Pilulæ Barbaroſſæ* work on that foundation. Perhaps it is the ſame caſe with thoſe of Mr. *Bairos* and *Belloſt*, of which may be read in Mr. *Gardan*'s work. But I would rather not truſt to ſuch remedies, for they cauſe either a ſtrong ſpitting, or the quick-ſilver is carried off by ſtools, as it commonly is combined with ſome purge. The *Dragees* of Mr. *Keyſer*, for and againſt which, ſo much has been written, would then do as well. They are prepared of quick-ſilver and vinegar, which Mr. *Keyſer* moſt likely has learnt from the writings of the great chemiſt *Margraaf*. The late Profeſſor *Sauvage* in *Montpellier*, and other connoiſſeurs, ſpeak favourably of them when the diſeaſe is inveterate *; ſuch praiſe, by men who are competent judges on the affair, gives me a greater opinion of the remedy than the recom-

* See *Journal de Medicine*, 1766, Mars p. 263.

mendations

mendations which Mr. *Keyſer* has found means to procure from perſons of quality.

The experienced Profeſſor *Venel* in *Montpellier*, mixes the panacea with a little of *turpethum minerale*, and uſes it frequently inſtead of the *dragees* of Mr. *Keyſer*.

Decoctions of *radix chinæ*, ſarſaparilla and ſaſſafras, were before much in uſe, but eſpecially *guaiacum*. Mr. *Ulric V. Hutten*, who during nine years laboured under this diſeaſe, got at laſt cured as he himſelf ſays by decoction of *guaiacum*, after he had gone through the ſalivation eleven times to no purpoſe. The phyſician to the Emperor *Charles* V. aſſerts, that he had cured three thouſand unhappy infected people by this remedy. He is told that one of the *French* kings was cured with a decoction of the *Burdock* root *. It is likewiſe mentioned that Dr. *Felz* has wrought miracles with his *Tiſan*; he died without diſcovering what it was made of. I ought not to ſuſpect him to have acted as quacks, who commonly underſtand *leger-de-main*, and mix in their tiſans ſome preparations of quick-ſilver without any one obſerving it, bragging that they cure the diſeaſe with herbs alone, notwithſtanding it is the ſalt of mercury which produces the greateſt effect. It is very well known that *guaiac* and ſarſaparilla often cure when they are uſed afterwards by them who ſeveral times have ſalivated without any conſiderable effect. The poiſon is ſtirred up by them, to uſe the expreſſion, and altered, and then acts in an unſettled gout (or *arthritis vaga*). We ſeldom can get theſe remedies freſh, therefore they are of leſs uſe here than in *America*. Two young gentlemen were affected to ſuch a degree, that their complaints and cries in the night time, reached their neighbours; they had at home in the year 1563, made uſe of a great many remedies, but to no purpoſe; they were at laſt obliged to go over to *America*, where they got well cured with a decoction of freſh *guai-*

* In how ſly a manner King *Francis* I. was infected, and at laſt loſt his life, by the venereal diſeaſe, may be read in the *Eſſais Hiſtoriques ſur Paris*, T. v. p. 184.

acum.

acum. See *Paralelle des differentes methodes de traiter la maladie venerienne*, p. 30. Dr. *Raymond* in *Marſeilles*, who before made uſe of the ointments for his patients without ſalivation, now commonly uſes the *ſolutio mercurialis* for them, and at the end of this cure lets them drink *decoctum lignorum.*

Thoſe who, without any right preparation or order, have uſed now the one and the other remedy, at laſt cauſe an alteration in the poiſon, and an indolence in their organs, that ſcarce any remedy can have an influence on them. We have inſtances of ſuch perſons having been cured with pills of *Mercurius ſublimatus corroſivus*; the operation of them is very violent, and ought therefore only to be employed in great neceſſity, and that under the inſpection of a very experienced man. They are compoſed of *Mercurius ſublimatus corroſivus, mercurius dulcis, g. guaiac, ammoniac, Powder of ſenna, pyrethrum* and *ſyrupus de ſpina cervina.* They are on ſuch occaſions much recommended by Mr. *Guyon*, Mr. *de la Sonne*, and Mr. *Faber*; they confirm their eulogiums with experiments. In the compoſition enters one twenty-eighth part of *mercurius ſublimatus corroſivus*, and not as Mr. *Aſtruc* pretends one-twentieth part. As their effect ſeems chiefly to ariſe from *mercur. ſubl. corr.* one ſhould think that *ſolutio mercurialis* in a greater doſe, could be given with more ſafety to the ſame effect.

Dr. *Faber* communicates another remedy which he uſed with ſucceſs when the mercury has failed, as eſpecially in ſwelling of the knee from a venereal cauſe. It is a tincture prepared of brandy, *pulpa colocynthidis*, ſaffron, cloves, *aniſum ſtellatum*, and *terra foliata tartari:* one finds plainly this operates as a ſtrong purge.

It is not long ago ſince we have got hopes to be able to cure poorer people with a ſimple remedy which likewiſe grows in this country; it is an herb I mean, which Archiater *V. Linne* calls *Conium.* We are confirmed in this by ſeveral experiments given by the great friend of mankind Archiater *Storck*; ſee *Annus Medicus*, iii. p. 131, 262, and 291; a book written by Dr. *Collin.* The herb may be uſed as tea, as decoction, in broth, in baths, or its extract made into pills. I myſelf have

have not tried it in ſuch caſes; but I am informed by my friends among the phyſicians, that it often has had good effects in remains of venereal diſorders, which would not yield to the mercury. It has been of great ſervice in diſeaſes of the throat ariſing from ſuch a cauſe, when uſed in gargariſms and fomentations *.

A ſimilar praiſe is beſtowed on an extract of *Aconitum flore cæruleo*, by this indefatigable gentleman; it is to be rubbed into a powder with ſugar.

We likewiſe learn from a book lately publiſhed by the ſame able practitioner, that *Flammula Jovis officinalis* cures venereal ſores. He preſcribes this herb as tea, or in decoction, and ſtrews powder of it on the ſores. Thoſe who have hoſpitals under their care, may in time be able to determine whether this can be confirmed.

Aſſeſſor *Sundelin*, ſurgeon of a regiment, uſes to waſh the whole *body* with *ſpiritus mercurialis*, and cures in this manner an inveterate venereal diſeaſe. That the mercury in this manner enters the blood, can be ſeen in his ſecond caſe, where it cauſed a full ſalivation. See the *Chirurgical Caſes*, p. 92.

I have enumerated ſo many methods of curing this diſeaſe, becauſe it is ſo different, and appears under ſo many ſhapes. The various age, conſtitution and ſex of the patient require a different treatment; an hereditary diſeaſe often wants a different cure from one which is contracted, and it varies in reſpect as it is more or leſs old. It is beſides of various degrees. One has a ſimple venereal diſeaſe, another has it complicated with the ſcurvy or ſome other acrimony in the juices. It will not anſwer to treat perſons ſo differently affected in one manner, and to underſtand a ſingle method only. A remedy may agree well with one, and not with another perſon. Sometimes we are obliged to combine ſeveral methods before we can gain the point. Therefore the experience and judgment

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* Mr. *Coſtes*'s opinion of this pleaſes me much. See *Journal de Medicine*, 168. *Nov.* p. 420, 434. Likewiſe that of Mr. *Tiſſot* in his *Avis au Peuple*, p. 669.

of

of the phyſician are required, together with an exact compliance of the patient.

CHAP. XXVIII.

On VERMIN.

CHILDREN become affected with vermin in the ſame manner as the ſcab, and it is likewiſe propagated and increaſed like that, but is more eaſily cured. An unguent made of parſley ſeeds and freſh butter, not ſalted, will drive the vermin out of the head after being applied for two or three times. However the ſureſt and beſides the moſt uſeful remedy is, to clear the vermin away from the child's head with a comb.

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ERRATA.

Page 20, line 18, chldren, *read* children.
42, l. 33, vervena, *read* verbenæ.
68, in the note, l. 1. warthy, *read* warty.
95, in the note, l. 5 from the bottom, ſchilliticum, *read* ſcilliticum.
102, l. 7 from the bottom, lay, *read* lie.
123 in the note, l. 7, felicia uſu, *read* ſelici auſu.
195, l. 12, Sedum, *read* Ledum.

FINIS.